JVC

SERVICE MANUAL

VIDEO CASSETTE RECORDER

HR-J600EG/J605EG

JVC
Hyper-Bass Sound
12:00
13:00
JVC

VHS
PAL

SPECIFICATIONS *(The specifications shown pertain specifically to the model HR-J600EG)*

GENERAL

Power requirement : AC 220 – 240 V∼, 50/60 Hz
Power consumption : 29 W
Temperature
  Operating : 5°C to 40°C
  Storage : –20°C to 60°C
Dimensions (WxHxD) : 435 x 104 x 336 mm
Weight : 5.5 kg
Format : VHS PAL standard
Maximum recording time (SP) : 240 min. with E-240 video cassette
  (LP) : 480 min. with E-240 video cassette

VIDEO/AUDIO

Signal system : PAL-type colour signal and CCIR monochrome signal, 625 lines/50 fields
Recording system : Rotary two-head helical scan system with slant double-azimuth combination video heads
Signal-to-noise ratio : 43 dB (Rohde & Schwarz noise meter)
Horizontal resolution : 250 lines
Frequency range : 70 Hz to 10,000 Hz (Normal audio)
  20 Hz to 20,000 Hz (Hi-Fi audio)
Input/Output : 21-pin scart connector x 2
  : RCA connectors (VIDEO IN x 1, AUDIO IN x 2, AUDIO OUT x 1)

TUNER/TIMER

Channel coverage : VHF 47 – 89/104 – 300/ 302 – 470 MHz
  UHF 470 – 862 MHz
Aerial output : UHF channel 36 (Adjustable 32 – 40)
Memory backup time : 60 min.

ACCESSORIES

Provided accessories : Aerial cable, Infrared remote control unit, "R6" battery x 2, AC power cord
Optional accessory : VPT adapter VU-V142E

Specifications shown are for SP mode unless otherwise specified.
Design and specifications subject to change without notice.

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No. 82369
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Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

● Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded (▨) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
   Caution for continued protection against fire hazard.
   Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers
   4) Insulation sheets for transistors
   5) Barrier

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

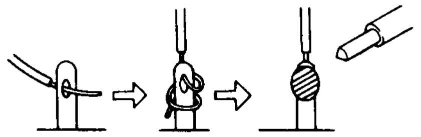


Fig. 1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10–15 kg of force in any direction will not loosen it.

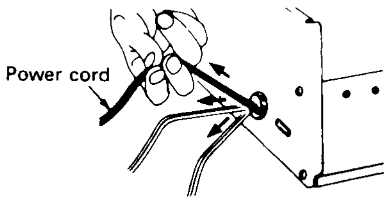


Fig. 2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.
    1) **Connector part number** : E03830-001
    2) **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.
    3) **Replacement procedure**
       (1) Remove the old connector by cutting the wires at a point close to the connector.
       Important : Do not reuse a connector (discard it).

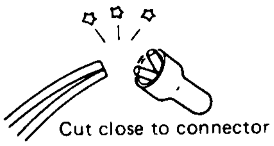


Fig. 3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

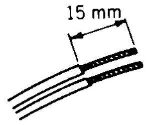


Fig. 4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

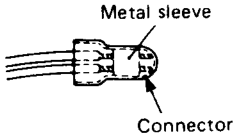


Fig. 5

(4) As shown in Fig. 6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

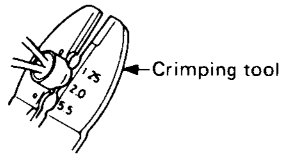


Fig. 6

(5) Check the four points noted in Fig. 7.

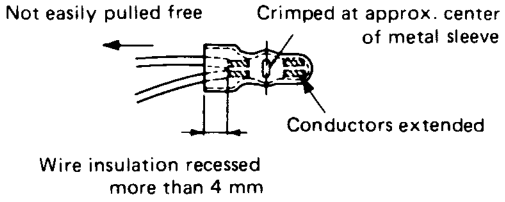

Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig. 7

INSTRUCTIONS

Safety Precautions

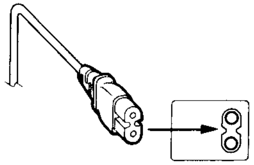
The rating plate and the safety caution are on the rear of the unit.

WARNING: DANGEROUS VOLTAGE INSIDE
WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

The OPERATE button does not completely shut off mains power from the unit, but switches operating current on and off.

This unit is produced to comply with Directives 76/889/EEC, 82/499/EEC, 87/308/EEC and Standard IEC Publ. 65.

CAUTION



- To avoid electric shock or damage to the unit, first firmly insert the small end of the AC power cord into the recorder until it is no longer wobbly, and then plug the larger end of the AC power cord into an AC outlet.
- When you are not using the recorder for a long period of time, it is recommended that you disconnect the power cord from the AC outlet.
- Dangerous voltage inside. Refer internal servicing to qualified service personnel. To prevent electric shock or fire hazard, remove the power cord from the AC outlet prior to connecting or disconnecting any signal lead or aerial.

WARNING
There are two different types of SECAM colour systems: SECAM-L, used in FRANCE (also called SECAM-West), and SECAM-B, used in Eastern European countries (also called SECAM-East).

1. This recorder can also receive SECAM-B colour television Signals for recording and playback.
2. Recordings made of SECAM-B television signals produce monochrome pictures if played back on a video recorder of SECAM-L standard, or do not produce normal colour pictures if played back on a PAL video recorder with SECAM-B system incorporated (even if the TV set is SECAM-compatible).
3. SECAM-L prerecorded cassettes or recordings made with a SECAM-L video recorder produce monochrome pictures when played back with this recorder.
4. This recorder cannot be used for the SECAM-L standard. Use a SECAM-L recorder to record SEMAN-L signals.

IMPORTANT:
- It may be unlawful to record or play back copyrighted material without the consent of the copyright owner.
- Please read the "Precautions" section of this instruction manual before installing or operating the recorder.

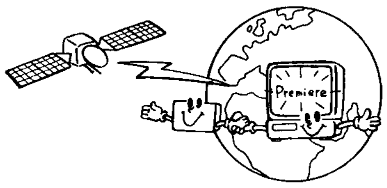
Video tapes recorded with this video recorder in the LP (Long Play) mode cannot be played back on a single-speed video recorder.

VHS PAL HQ

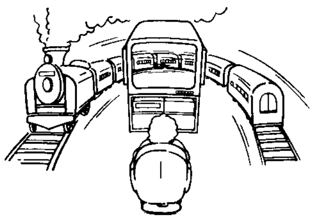
- Only cassettes marked "VHS" can be used with this video recorder.
- HQ VHS is compatible with existing VHS equipment.

Features

Some Other Functions On Your Video Recorder

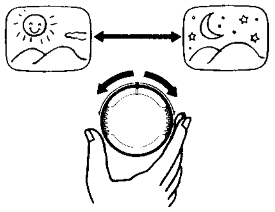


Premiere Decoder Compatible
Can subscribe to Premiere and receive satellite broadcasts via a connected Premiere decoder.



Hi-Fi Stereo Sound
Enjoy films with Hi-Fi stereo soundtracks just as you would in theatres. Use the built-in Sound-Multiplex decoder to record stereo or bilingual programmes.

Express Timer
Makes timer programming as easy as pressing three buttons on the recorder. Start time, stop time, engage — that's all!



Shuttle Dial
Fast, accurate visual search from slow motion to fast motion.

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● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. **Insulation resistance test**
   Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. **Dielectric strength test**
   Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. **Clearance distance**
   When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

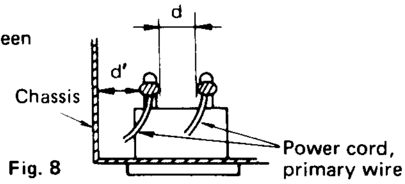


Fig. 8

4. **Leakage current test**
   Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).
   Measuring Method: (Power ON)
   Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

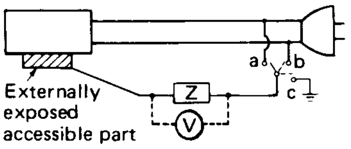


Fig. 9

5. **Grounding (Class I model only)**
   Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).
   Measuring Method:
   Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

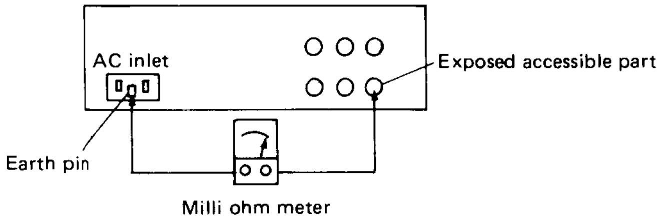


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R ≧ 1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 minute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	–	AC 1 kV 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R ≧ 10 MΩ /500 V DC	AC 3 kV 1 minute (Class II) AC 1.5 kV 1 minute (Class I)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

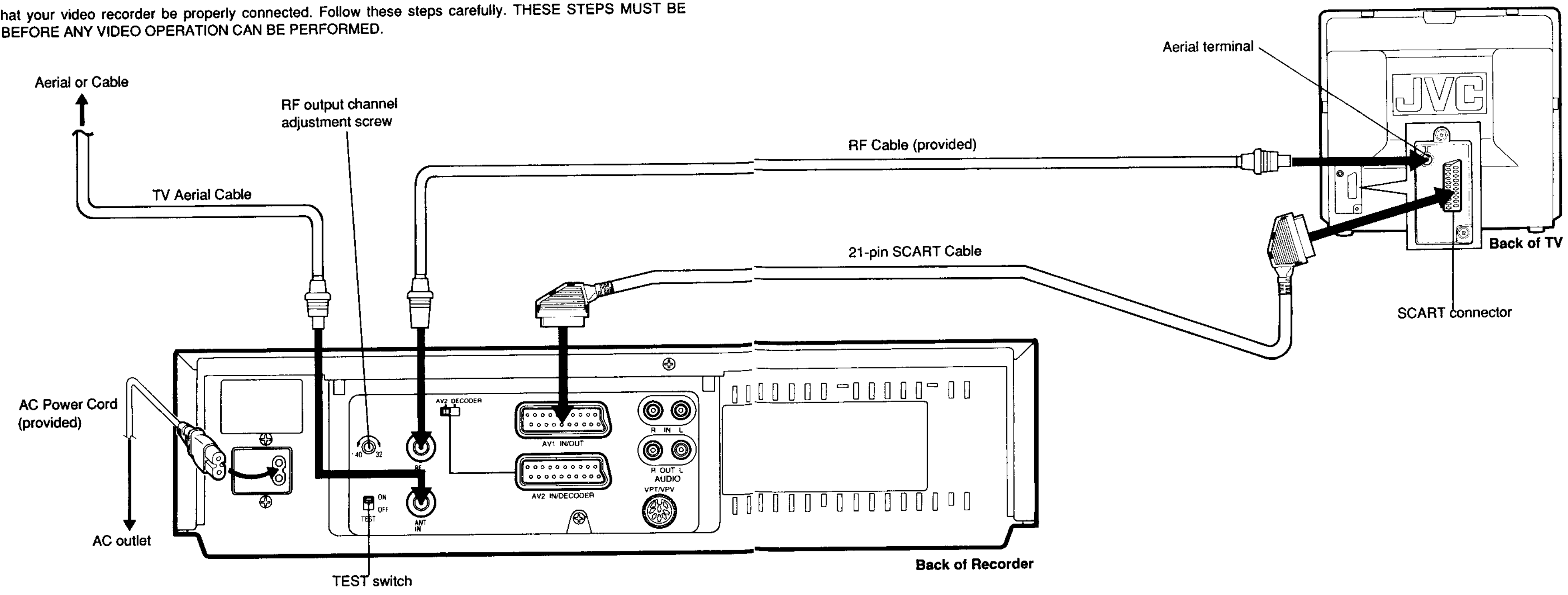
AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 μF 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

Installation

It's essential that your video recorder be properly connected. Follow these steps carefully. THESE STEPS MUST BE COMPLETED BEFORE ANY VIDEO OPERATION CAN BE PERFORMED.


Aerial or Cable
RF output channel adjustment screw
TV Aerial Cable
RF Cable (provided)
Aerial terminal
JVC
21-pin SCART Cable
Back of TV
SCART connector
AC Power Cord (provided)
AC outlet
AV2 DECODER
AV1 IN/OUT
AV2 IN/DECODER
R IN L
R OUT L
AUDIO
VPT/VPV
40
32
RF
ON
OFF
TEST
ANT IN
TEST switch
Back of Recorder

A RECORDER-TO-TV CONNECTION

RF CONNECTION

For TV sets without AV input terminals:

1. Connect the TV aerial cable to the recorder.
2. Connect the recorder with the provided RF cable to the TV's aerial terminal.

AV CONNECTION

For TV sets with AV input terminals:

1. Connect the aerial, recorder and TV as per "RF CONNECTION".
2. Connect the recorder with an optional SCART cable to the TV's 21-pin SCART connector.

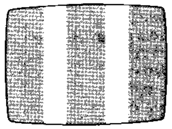
B CONNECT RECORDER TO WALL OUTLET

1. First, firmly insert the small end of the AC power cord into the recorder, and then plug the larger end of the AC power cord into the AC outlet.

C TUNE THE TV TO YOUR VIDEO RECORDER

The video recorder sends picture and sound signals via the RF connecting cable to your TV on UHF channel 36.

TEST SIGNAL



1. Turn on the recorder.
2. Set the TEST switch to ON.
3. Press TV/VIDEO to engage the VIDEO mode.
4. Set your TV to the video channel. Tune the TV to bring the two vertical white bars on the screen most clearly. (UHF/CH 36)
   - Your TV should be set to the channel designated for use with a video recorder or to a spare channel if there is not a specified video channel on your TV.
5. Reset the TEST switch to OFF.

NOTES:

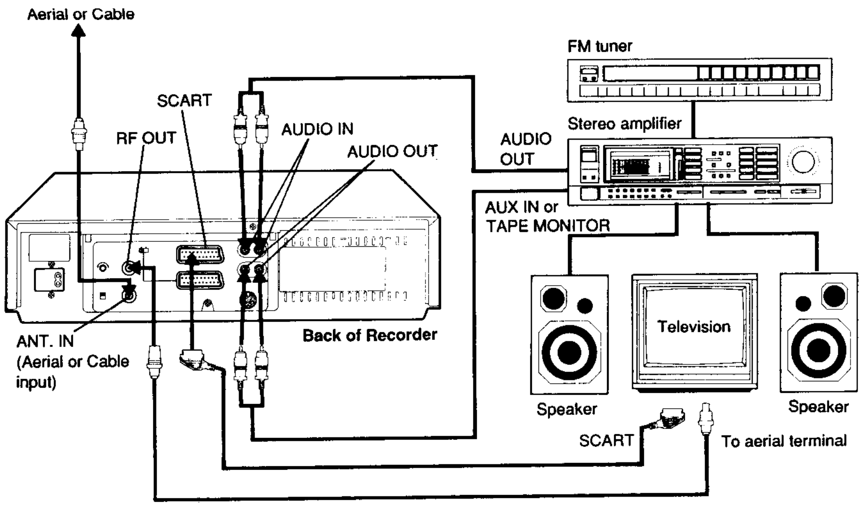
- If CH36 is occupied by a local station, adjust the RF output channel adjustment screw to use another channel between CH32 and CH40 instead.
- If some interference noise is continually seen on the screen, consult your JVC dealer.

IMPORTANT:

To operate the recorder with your TV using the RF connection, it is always necessary to set your TV's channel to the VIDEO channel. With an AV connection, set the TV to the VIDEO (or AV) mode.

Installation (cont'd)

CONNECTING TO HI-FI STEREO SYSTEM


Aerial or Cable
SCART
RF OUT
AUDIO IN
AUDIO OUT
FM tuner
Stereo amplifier
AUDIO OUT
AUX IN or TAPE MONITOR
ANT. IN (Aerial or Cable input)
Back of Recorder
Speaker
Television
Speaker
SCART
To aerial terminal

If you have a Hi-Fi stereo system, you can connect your video recorder to it so that the sound can be heard through your Hi-Fi system. Please make these additional connections:

HI-FI AUDIO CONNECTION

1. Connect the AUDIO IN L and R connectors of the recorder to the recording output terminals of the amplifier.
2. Connect the AUDIO OUT L and R connectors of the recorder to the AUX IN or TAPE MONITOR terminals of the amplifier.

NOTES:

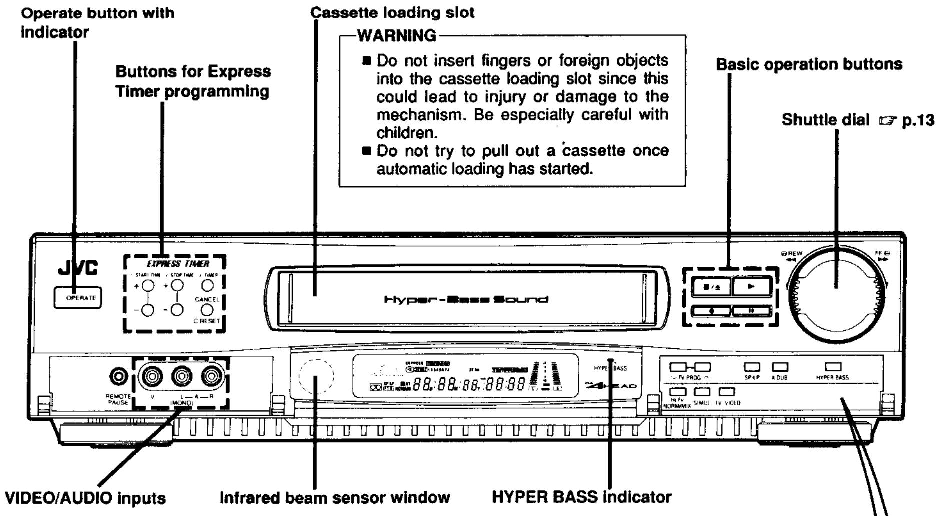
- Make sure L and R are correct when connecting the audio input and output connectors of the recorder to a stereo amplifier.
- If stereo or bilingual TV broadcasts are receivable in your area, this recorder can record them independently of the TV set and play them back through the connected audio system.
- When listening to sound from the connected stereo system, turn down the sound volume of the TV completely.

CAUTION:

- This recorder has a dynamic range of more than 90 dB with regards to its hi-fi audio capability. It is recommended that you check the maximum level if you are going to listen to the hi-fi audio signals through a stereo amplifier. A sudden surge in speaker input may cause speaker damage.
- Some speakers and televisions are specially shielded to prevent television interference. If both are of the non-shielded type, do not place the speakers adjacent to the TV set, otherwise the video playback picture may be adversely affected.

Controls And Indicators

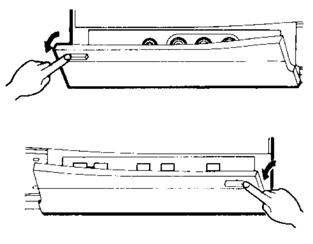
Front Panel

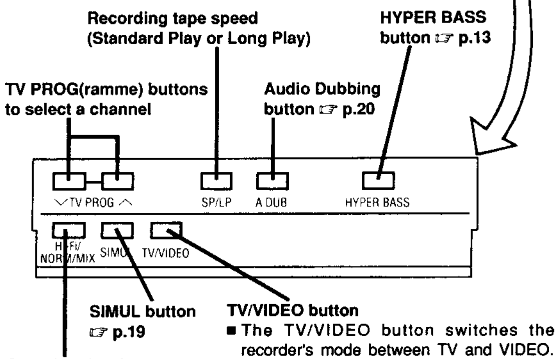

Operate button with indicator
Buttons for Express Timer programming
Cassette loading slot
Basic operation buttons
Shuttle dial ☞ p.13
JVC
OPERATE
EXPRESS TIMER
Hyper-Bass Sound
VIDEO/AUDIO inputs
Infrared beam sensor window
HYPER BASS indicator

WARNING

- Do not insert fingers or foreign objects into the cassette loading slot since this could lead to injury or damage to the mechanism. Be especially careful with children.
- Do not try to pull out a cassette once automatic loading has started.

Open lid to access covered connectors and buttons.



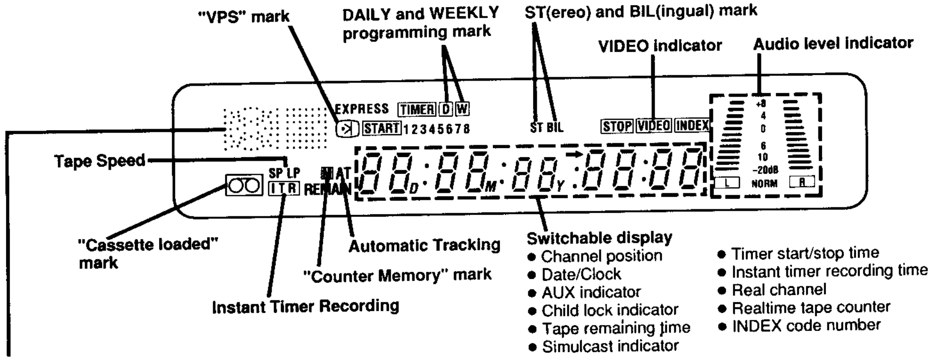

Recording tape speed (Standard Play or Long Play)
HYPER BASS button ☞ p.13
TV PROG(ramme) buttons to select a channel
Audio Dubbing button ☞ p.20
∨TV PROG∧
SP/LP
A DUB
HYPER BASS
HI-FI/NORM/MIX
SIMUL
TV/VIDEO
SIMUL button ☞ p.19
Soundtrack select button ☞ p.13

TV/VIDEO button

- The TV/VIDEO button switches the recorder's mode between TV and VIDEO. When the power is turned on, the recorder's TV mode is selected. To use the recorder's function, select the VIDEO mode.
- When the TV/VIDEO button is used to change the recorder's mode to VIDEO via AV connection, the connected TV's mode also switches to VIDEO automatically.

Controls And Indicators (cont'd)

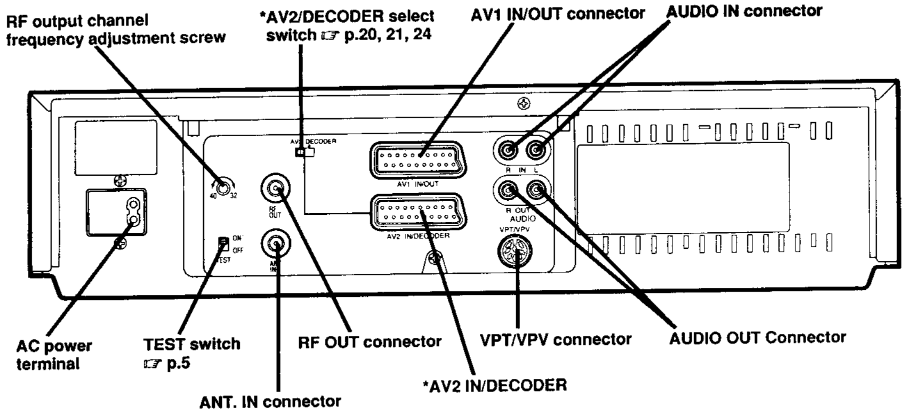
Display Panel


"VPS" mark
DAILY and WEEKLY programming mark
ST(ereo) and BIL(ingual) mark
VIDEO indicator
Audio level indicator
Tape Speed
"Cassette loaded" mark
Automatic Tracking
"Counter Memory" mark
Instant Timer Recording
Switchable display
● Channel position
● Date/Clock
● AUX indicator
● Child lock indicator
● Tape remaining time
● Simulcast indicator
● Timer start/stop time
● Instant timer recording time
● Real channel
● Realtime tape counter
● INDEX code number
EXPRESS TIMER D W
START 12345678
ST BIL
STOP VIDEO INDEX
SP LP
ITR
AT
REMAIN
+8 4 0 6 10 -20dB
L NORM R

Symbolic mode indicators

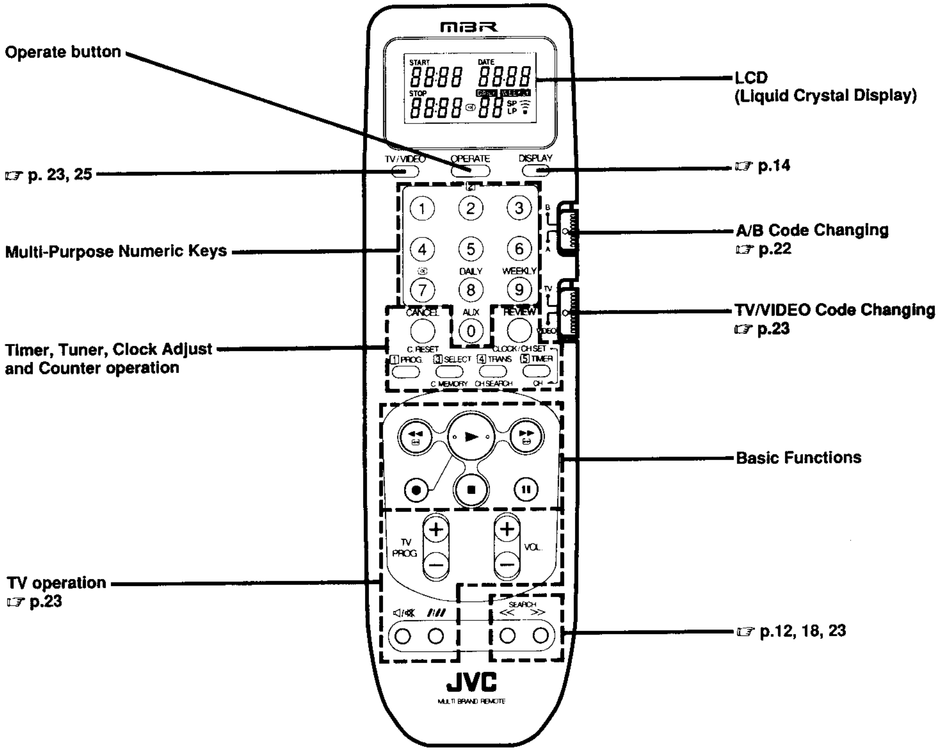
PLAY:	▷	REW VARIABLE SHUTTLE SEARCH:	◁ ◁◁	RECORD:	○
FF:	▷▷	REVERSE PLAY:	◁	RECORD PAUSE:	○ ▯▯
REW:	◁◁	STILL: REVERSE SLOW:	◁ ▯▯	AUDIO DUBBING:	○
FF VARIABLE SHUTTLE SEARCH:	▷ ▷▷	STILL: FORWARD SLOW:	▷ ▯▯	AUDIO DUBBING PAUSE:	○ ▯▯

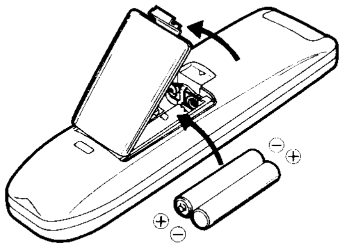
Rear Panel


RF output channel frequency adjustment screw
*AV2/DECODER select switch ☞ p.20, 21, 24
AV1 IN/OUT connector
AUDIO IN connector
AC power terminal
TEST switch ☞ p.5
RF OUT connector
VPT/VPV connector
AUDIO OUT Connector
*AV2 IN/DECODER
ANT. IN connector

***When AV2/DECODER switch is set to AV2:** AV2 IN/DECODER Connector works as auxiliary input connector. **When AV2/DECODER switch is set to DECODER:** AV2 IN/DECODER Connector works as input connector for Premiere decoder.

Wireless Remote Control


Operate button
LCD (Liquid Crystal Display)
☞ p. 23, 25
☞ p.14
A/B Code Changing ☞ p.22
Multi-Purpose Numeric Keys
TV/VIDEO Code Changing ☞ p.23
Timer, Tuner, Clock Adjust and Counter operation
Basic Functions
TV operation ☞ p.23
☞ p.12, 18, 23
TV/VIDEO
OPERATE
DISPLAY
DAILY
WEEKLY
CANCEL
AUX
REVIEW
C.RESET
CLOCK/CH SET
PROG
SELECT
TRANS
TIMER
C.MEMORY
CH SEARCH
TV PROG
VOL.
SEARCH
JVC
MULTI BRAND REMOTE



Installing Batteries

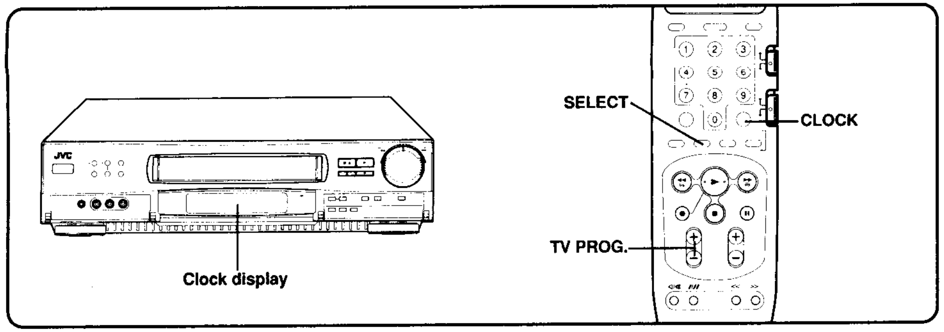
1. Open the battery compartment cover.
2. Insert 2 "R6"-size batteries (provided) in the correct directions.
3. Replace the cover.

How To Use

The remote control can operate most of your video recorder's functions, as well as basic functions of TV sets of JVC and other brands. ☞ p. 23.

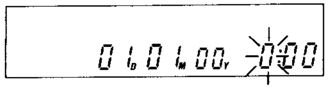
- Point the remote control toward the sensor window.
- The maximum operating distance of the remote control is about 8 m.

Setting The Clock

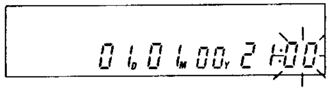


Since your video recorder bases all of its timer recording start and stop "decisions" on the time kept by its built-in clock, accurate setting of this clock is crucial for proper timer-recording results.

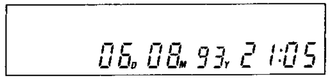
1. **Press CLOCK.**



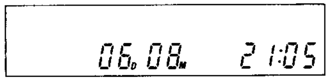
2. **Press TV PROG. to set the hour, and then SELECT.**



3. **Repeat step 2 to set the minute, day , month and year.**



4. **Press CLOCK.**



TO MAKE CORRECTIONS

Advance with SELECT to the item you wish to change and input new data with TV PROG.

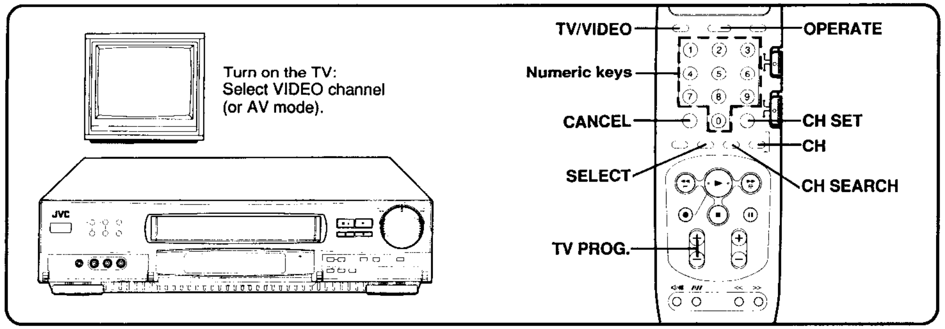
POWER FAILURE INDICATOR

The clock resets to "0:00" and starts blinking when there has been a power failure. Reset the time to return the clock display to normal.

NOTE:

- If the day and month data is invalid (such as 31st April), the month digits are cleared automatically and the day digits will blink. Input again.

Setting The Tuner



The procedure introduced here lets you assign receivable channels in your area to channel positions on your video recorder's tuner. Once stored, these can be accessed with the TV PROG. buttons.

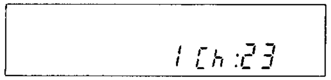
1. **Press OPERATE to turn on the recorder.**

2. Press TV/VIDEO to engage the VIDEO mode.

3. **Press CH SET to engage the Channel Set mode.**

4. **Press CH SEARCH to start automatic scanning for receivable channels.**

- Automatic scanning stops when a station is detected, and the channel position will blink.



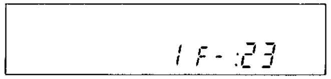
Ch = Regular CC = Cable

- If you don't want to store the station detected, simply press CH SEARCH to continue automatic scanning.

5. **Press SELECT to fine-tune the channel, if necessary.**

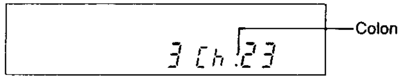
- When the picture is clear, proceed to step 8.

6. **Press TV PROG. +/– so that the picture becomes clear.**



7. **Press SELECT.**

8. **Press numeric keys or TV PROG. to select the channel position where you wish to store that TV station.**



9. **Press CANCEL to store the station.**

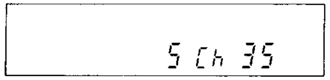
- The colon will disappear when the station is stored.

10. **Repeat steps 4 through 9 for other receivable channels.**

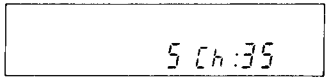
11. **Press DISPLAY to exit the Channel Set mode.**

TO DELETE STORED CHANNELS

1. Press TV PROG. to select the channel position you want to skip.
2. Press CH SET.



3. Press CANCEL.



- The colon will appear when the station is deleted. Channel position 5 can no longer be chosen by TV PROG. buttons.

4. Press DISPLAY to exit the Channel Set mode.

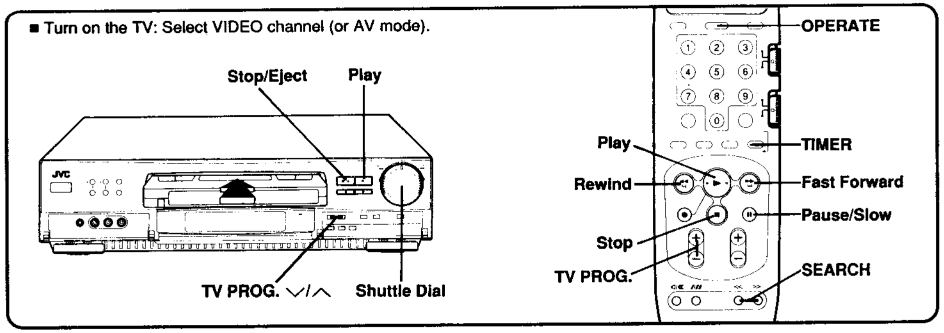
TO STORE NEW CHANNELS

1. Press CH SET.
2. Press CH.
   - Real channel starts blinking.
3. Press CH to change the band between Ch and CC, if necessary.
4. Press numeric keys to input the number of the real channel you want to store.
5. Press numeric keys to input the number of a vacant channel position.
6. Press CANCEL to store the channel.
7. Press DISPLAY to exit the Channel Set mode.

If using a Premiere decoder, ☞ p.25.

Playback

- Turn on the TV: Select VIDEO channel (or AV mode).



Basic Operations

1. **Load a cassette.**
   - The recorder power will come on automatically.
   - The counter will re-set to "0:00:00" automatically.
   - If the safety tab on the cassette is removed, playback will start automatically.
2. **Press Play to start playback.**
3. **Press Stop to stop playback.**
   - To rewind the tape, press Rewind or turn the Shuttle to the left and release it.
   - To fast-forward the tape, press Fast Forward or turn the Shuttle to the right and release it.
   - To stop rewind or fast-forward, press Stop.
4. **Press Stop/Eject on the recorder to eject the tape.**

Variable Speed/High-speed Search, Still Playback/Frame Advance/Forward Slow Motion

During Playback or Still:
- Press either SEARCH button for variable-speed search.
- The more times the button is pressed, the faster the playback picture will move.
- To decrease speed, press the button for the opposite direction.

During Playback:
- Press Fast Forward for high-speed forward search, or Rewind for high-speed reverse search.
- For short searches, keep Fast Forward or Rewind pressed for more than 2 seconds. When released, normal playback will continue.
- Press Pause/Slow to view a still picture.
- Press again to advance the picture frame by frame.
- Press Pause/Slow for 2 seconds for slow motion.

Other Functions

Manual Tracking

Your video recorder is equipped with automatic tracking control. If there is picture distortion or "breaks" in the sound of Hi-Fi VHS tapes caused by mistracking, you can finely adjust tracking manually.

During Playback:
1. Press the recorder's TV PROG. ∨ and ∧ buttons simultaneously.
2. Press TV PROG. ∨ or ∧ to adjust tracking.
   - Press the recorder's TV PROG. ∨ and ∧ simultaneously to return to automatic tracking.

During Slow:
1. Simply press TV PROG. ∨ or ∧ to adjust tracking.

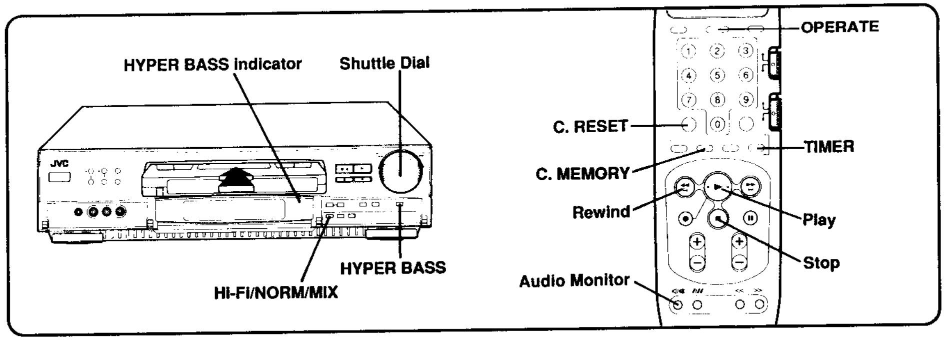
Open Search Function

Your video recorder lets you view the picture being rewound or fast-forwarded so you can easily check how far the tape has gone.

During Rewind:
1. Keep the remote's Rewind button pressed, or turn the Shuttle Dial fully to the left.
   - The rewinding tape's picture will be visible.
2. Release the Rewind button or Shuttle Dial to resume normal rewinding.

During Fast Forward:
1. Keep the remote's Fast Forward button pressed, or turn the Shuttle Dial fully to the right.
   - The fast forwarding tape's picture will be visible.
2. Release the Fast Forward button or Shuttle Dial to resume normal fast forwarding.

NOTES:
- The recorder automatically stops when still continues for more than 5 minutes.
- If the still picture is unstable, use the TV PROG. buttons to correct the picture.
- During search playback, some noise bars will appear.
- There is no audio during search, slow, still, or frame-by-frame playback.
- When a new tape is inserted, the recorder enters the automatic tracking mode automatically.
- Tapes with monaural soundtracks (normal audio) are automatically played back in the NORM mode. When playing back tapes with Hi-Fi stereo soundtracks, ☞p.13.
- When playing back LP recordings in the search, still, or frame by frame playback mode, the picture will be distorted, and there may be a loss of colour.



Soundtrack Selection

During Playback:
Your video recorder is capable of recording three soundtracks (HIFI L, HIFI R and NORM) simultaneously, and playing back the selected soundtrack.
- Pressing Audio Monitor on the remote control changes the track:

Track: (on display panel)	Use:
L + R	for Hi-Fi stereo tapes.
L	for main audio of bilingual tapes.
R	for sub audio of bilingual tapes.

- Pressing Hi-Fi/NORM/MIX on the recorder changes the mode:

Mode:	Track: (on display panel)	Use:
HIFI	L and/or R	for Hi-Fi stereo tapes
NORM	NORM	for audio-dubbed tapes.
MIX	NORM + L and/or R	for audio-dubbed tapes.

NOTE:
- Normally use the L + R position. Then Hi-Fi stereo tapes are played back in stereo, and tapes with normal audio only are played back automatically in the NORM mode.

Hyper Bass

You can boost the bass sounds of music videos to make them sound more exciting.

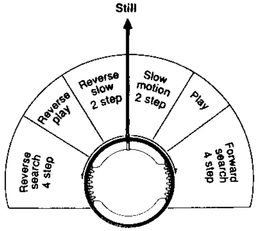
During Playback :
1. Press HYPER BASS.
   - The HYPER BASS indicator will light, and bass sounds will be boosted.
2. Press HYPER BASS again to cancel the Hyper Bass mode.

Shuttle Dial Control

You can view pictures in slow to fast motion.

During Still or Playback:
1. Turn the Shuttle to the right for forward slow motion and search.
   - Release the Shuttle for a still picture, or...
   - For fast-forward with a visible picture, turn the Shuttle all the way to the right and release it within 1 second.
2. Turn the Shuttle to the left for reverse play and search.
   - Release the Shuttle for a still picture, or...
   - For rewind with a visible picture, turn the Shuttle all the way to the left and release it within 1 second.

To resume normal playback, press the Play button.

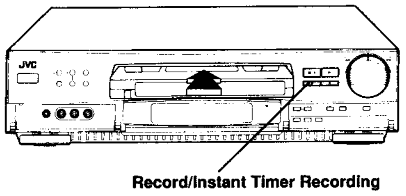


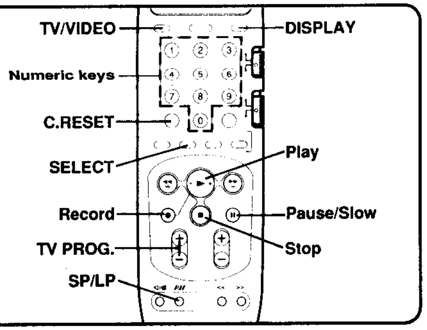
Repeat Playback

During Playback:
1. Press Play for more than 5 seconds, and release.
   - The Play indicator ( ) on the display panel will blink slowly.
   - The tape will be played all the way to the end, 20 times automatically, and then stop.
2. To stop the tape during Repeat Playback, press Stop.

Recording

- Turn on the TV: Select VIDEO channel (or AV mode).





Basic Operations

1. **Load a cassette.**
   - The recorder power will come on automatically.
2. **Press TV/VIDEO to engage the VIDEO mode.**
3. **Press TV PROG. or the numeric keys to select the channel you wish to record.**
4. **Press SP/LP to select the tape speed.**
5. **Press Record and Play simultaneously.**
6. **Press Pause/Slow to pause recording.**
7. **Press Play to resume recording.**
8. **Press Stop to stop recording.**

To Watch Another Programme While Recording

During Record:

1. If your recorder is connected to the TV via AV connection, press TV/VIDEO.
   - The recorder's VIDEO indicator and the TV broadcast being recorded will disappear.
2. Use the channel controls on the TV to select the other channel you wish to view.
   - The programme selected with the TV channel controls will appear on the TV screen while the one selected with the video recorder's channel controls will be recorded on the tape.
   - If the Premiere decoder is connected to the recorder (☞ p.25), you can select the Premiere channel as well with the TV channel controls.

Instant Timer Recording (Off Timer)

You can start a recording and then set the recorder to shut off automatically after a set duration.

During Record:

1. Press Record on the recorder. "ITR" and "0:30" indications appear, advising that power will switch off after 30 minutes.
2. Press Record again to delay the off-time by 30-minute increments (up to 4 hours).
   - For more precise setting, use the remote control's SELECT and TV PROG. buttons to set the exact time required (possible up to 8 hours and 59 minutes).

Other Functions

Elapsed Recording Time Indication

When you need to know the exact time of a recording.

1. Press DISPLAY until a counter reading appears on the display panel.
2. Press C.RESET before starting recording or playback.
   - The counter will be reset to "0:00:00" and show the exact elapsed time as the tape runs.

Display Button

When you wish to check the remaining tape time, clock time, date, or counter reading.

1. Press DISPLAY to display the remaining tape time.
2. Press DISPLAY again to display the current clock time.
3. Press DISPLAY again to display the current date.
4. Press DISPLAY again to display the counter reading.

Retake

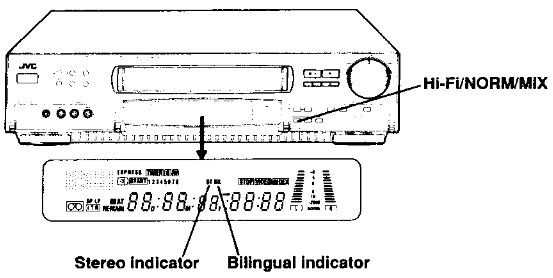
You can cut out unwanted parts of a TV programme while you're recording it.

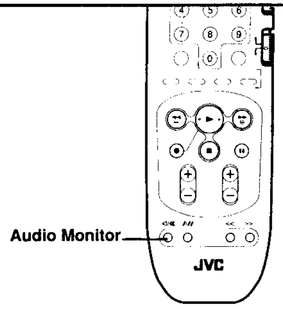
During Record:

1. Press Pause/Slow.
2. Turn the Shuttle dial or press Rewind (or Fast Forward) for search in the corresponding direction.
   - Release to return to Record-Pause mode.
3. Press Play when you wish to resume recording.

NOTES:

- To start recording with the recorder's Record button, press it once on its own.
- After pause, when recording is resumed, a few frames recorded before the pause may be overlapped by the new recording. This is meant to reduce picture distortion and is not a malfunction.
- The recorder automatically stops when record-pause continues for more than 5 minutes.
- If the Record button does not work, check to see if the cassette's safety tab has been removed.
- The channel cannot be changed while recording is in progress. To change the channel, engage the record-pause mode, then change the channel.
- The recorder automatically rewinds when the end of the tape is reached during recording.
- The recorder automatically places an index code on the tape every time recording begins. For information on the Index Search function, ☞ p. 18.





Stereo And Bilingual

Your recorder is equipped with a Sound-Multiplex decoder for reception of stereo and bilingual broadcasts.

- When a stereo programme is being received, the ST indicator lights on the display panel.
- When a bilingual programme is being received, the BIL indicator lights on the display panel.

To Record Stereo Programmes

Stereo programmes are automatically recorded in stereo on the Hi-Fi audio track (with the normal audio track recording mixed L and R channel sound). No special operation is required. Simply follow the basic recording procedure.

- To listen to the stereo soundtrack while recording, select "L+R" with Audio Monitor. ☞ p.13

NOTE:

- If the quality of stereo sound being received is poor, the ST indicator will go off, and the broadcast will be received in monaural with better quality.

To Record Bilingual Programmes

Bilingual programmes are automatically recorded in bilingual on the Hi-Fi audio track. The main soundtrack will be recorded on the normal audio track.

- To listen to the Hi-Fi soundtrack during recording, select "L" for Main, and "R" for Sub.
- To listen to the normal soundtrack, select "NORM" with the Hi-Fi/NORM/MIX button on the recorder.

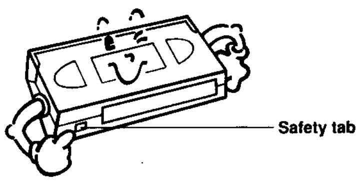
Usable Cassettes And Their Recording Times

This video recorder can record on regular VHS and Super VHS cassettes. However, it will record and play back regular VHS video signals only. It is not possible to play back a recorded Super VHS tape.

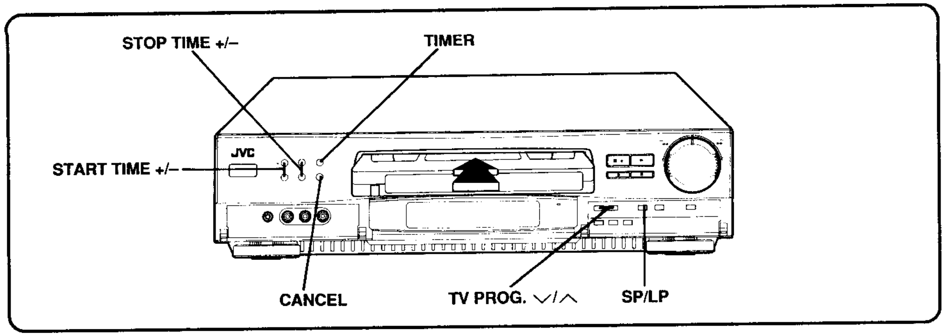
Type of Cassette	Recording/Playback Time (minutes)	
	SP Speed	LP Speed
E-240	240	480
E-180	180	360
E-120	120	240
E-90	90	180
E-60	60	120
E-30	30	60

Accidental Erasure Prevention

To prevent accidental recording on a recorded cassette, remove its safety tab. To record on it later, cover the hole with adhesive tape.



— Express Timer —



The "Express Timer" is the quickest method of programming your video recorder's timer. TV shows to be broadcast within 24 hours can be programmed for automatic recording simply by pressing three buttons (conveniently numbered) on your recorder's control panel.

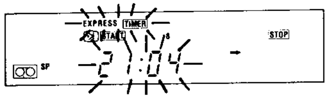
TIMER PROGRAMMING IS NOT POSSIBLE UNLESS THE CLOCK HAS BEEN SET.

Preparation

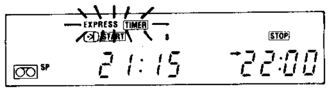
Insert a cassette with the safety tab in place.

- The recorder power will come on automatically.
- The display panel will show the channel being received.
- To change the channel, press TV PROG.
- To change the tape speed, press SP/LP.

1. **Press START TIME +.**
   - The current time will appear on the display panel.
2. **Press START TIME +/– to set the start time.**
   - START TIME + (STOP TIME +) advances the time and START TIME – (STOP TIME –) reverses the time.
   - Press briefly to change by 1 minute. Hold the button down to change by 30-minute increments.



   - After the start time is set, the date (today or tomorrow) and channel will be displayed for 3 seconds.
3. **Press STOP TIME +.**
   - The start time will be transferred over to the stop time position.
4. **Press STOP TIME +/– to set the stop time.**



   - Normally, you should leave ⊛ on so you can take advantage of VPS recording. (☞ p. 19) If you wish to cancel VPS, press ⊛ (the numeric key "7").
5. **Press TIMER.**
   - The recorder will enter the Timer mode and power will go off.

TO CANCEL THE PROGRAM

While timer programming, press CANCEL.

- Pressing CANCEL again disengages the Timer Program mode.

Or...

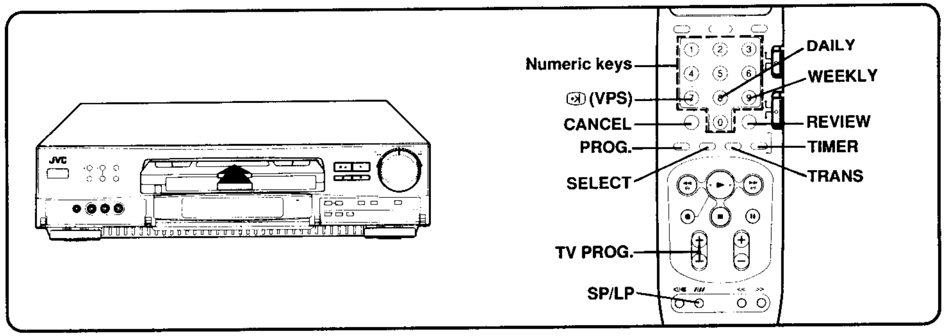
While in the Timer mode, first press TIMER to disengage the Timer mode, and press START TIME+. Then press CANCEL twice.

TO CHECK PROGRAMMED SETTINGS

While in the Timer mode, press START TIME + to check the settings you have programmed. DO NOT press START TIME + while the Timer mode is cancelled because this will clear the programmed data for a new entry.

To use the recorder after setting to the Timer mode, ☞ p.17
If you are using a satellite tuner and wish to timer-record satellite programmes, ☞ p.19

— LCD Timer Programming —



The LCD timer programming lets you input all necessary settings at the remote control and transfer them to your recorder at the touch of a button.

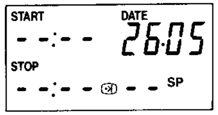
Preparation

Insert a cassette with the safety tab in place.

- The recorder power will come on automatically.

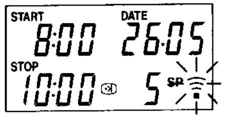
1. **Press PROG.**
2. **Press numeric keys to input the date.**

   Ex.: For 26th May, press 2 6 0 5.



3. **Press numeric keys to input the start time, stop time and channel.**

   Ex.: For 8:00, press 0 8 0 0.



   WEEKLY program: After inputting the channel, press numeric key "9".
   DAILY program: After inputting the channel, press numeric key "8".

   - Normally, you should leave ⊛ on so you can take advantage of VPS recording. (☞ p. 19) If you wish to cancel VPS, press ⊛ (the numeric key "7").

4. **Press SP/LP to select the tape speed.**
5. **Press TRANS with the remote control directed to the recorder's Remote Sensor window.**
6. **Press TIMER.**
   - The recorder will enter the Timer mode and power will go off.

TO MAKE CORRECTIONS

- During steps 2 and 3, press CANCEL to backspace and input new data.
- After setting the channel in step 3, press SELECT to make the item you want to change blink, and input new data.
- Pressing PROG. clears the programmed data.

TO CHECK, CANCEL AND REPLACE PROGRAMS

To check preset programs:

1. Press REVIEW until the program settings are displayed on the display panel.
   - Program 1 is displayed with the number blinking.
2. Press SELECT to review the program contents in succession.
3. To check another program, press REVIEW again.

To cancel the program:

4. Press CANCEL.
   - You can press CANCEL at any stage while the program is open.

To replace a program:

5. Use the SELECT and TV PROG. buttons to input new data.

TO USE THE RECORDER AFTER SETTING TO THE TIMER MODE

For safety, your recorder disables all other functions while in the Timer mode.

- Press TIMER to disengage the Timer mode.
- To re-engage the Timer mode, press TIMER.

If you are using a satellite tuner and wish to timer-record satellite programmes, ☞ p.19

Timer-Recording (cont'd)

Error Indications

The following error indications may appear on the recorder when you press the TIMER button to engage the Timer Standby mode. Here's why, and what you should do.

■ "TIMER" and "🖭" on the display panel continue blinking.
WHY: There is no cassette in the recorder.
WHAT TO DO: Insert a cassette.

■ The cassette is automatically ejected. "TIMER" and "🖭" continue blinking.
WHY: The inserted cassette has its safety tab removed.
WHAT TO DO: Insert a cassette with its safety tab intact. Or cover the safety tab hole of the cassette with adhesive tape and re-insert it. ☞ p.15.

■ "TIMER" blinks for 10 seconds and the Timer Standby mode is cancelled.
WHY: There are no preset programs in memory, or they have all been incorrectly preset.
WHAT TO DO: Check the programmed data and re-program it as necessary. Press TIMER again.

Other Indications

■ "TIMER" steady lit (with clock display).
WHY: The recorder is in the Timer Standby mode. This is the normal display you should see when you press the TIMER button.

■ "◌" and "TIMER" steady lit.
WHY: Normal display while timer-recording is in progress.

■ The cassette was ejected, with power off and "TIMER" and "🖭" are blinking.
WHY: This means that the end of the tape was reached while timer-recording was in progress. Therefore, the preset program may not be recorded in its entirety.

■ "0:00" blinking.
WHY: This means the clock must be set. It's displayed when time-keeping is terminated due to a power failure or because the recorder's power plug was pulled from the AC outlet.
WHAT TO DO: Set the clock. ☞ p.10.
■ If power was interrupted, it's also likely that all preset timer programming data has been erased. Please check and re-program as necessary.

■ "-- -- -- -- --" is displayed for about 5 seconds when the TRANS button is pressed.
WHY: Data was not successfully transferred. The program may have been incorrectly preset, or the recorder's clock has not been set, or all the recorder's timer programs (1 – 7) are preset.
WHAT TO DO: Check the LCD program, and re-program as necessary. Transfer the correct data. Or cancel unnecessary programs, and transfer again.

Other Functions

Counter Memory

During Playback:
1. Press DISPLAY until a counter reading appears on the display panel.
2. Press C.RESET at a point you wish to locate later.
   - ■ The counter will read "0:00:00".
3. Press C.MEMORY.
   - ■ The M indicator will light on the display panel.
4. When you wish to return to that point, press Stop and then Rewind.
   - ■ The tape will rewind and stop at about "0:00:00" automatically.
5. To cancel the Counter Memory mode, press C.MEMORY again.

Next Function Memory

During Stop:

For automatic start of playback after the tape is rewound:
1. Press Rewind.
2. Press Play within 2 seconds.

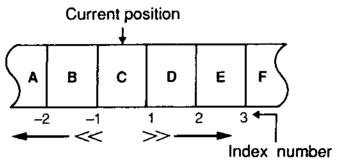
For automatic power off after the tape is rewound:
1. Press Rewind.
2. Press OPERATE within 2 seconds.

For automatic timer standby after the tape is rewound:
1. Press Rewind.
2. Press TIMER within 2 seconds.

Index Search

This function gives you quick access to any one of 9 index codes in either direction. Your recorder automatically marks index codes at the beginning of each recording.

During Stop:
1. Press SEARCH << or >>. "INDEX –1" or "INDEX 1" will be displayed on the display panel and search will begin in the corresponding direction.
2. If you wish to access index codes 2 through 9, press SEARCH repeatedly until the correct index number is displayed.
   Ex.: To locate the beginning of B from the current position, press SEARCH << twice.
   To locate the beginning of D from the current position, press SEARCH >> once.



■ When the specified index code is found, playback will start automatically.

Timer-Recording From A Satellite Tuner

If you want to timer-record programmes received via a satellite tuner or other external source connected to your recorder's rear panel AV2 IN/DECODER connector, follow these steps.

For Express Timer Programming:
1. Press TV PROG. until "AU 2" appears on the recorder's display panel.
2. Program the timer (☞ p.16 "Express Timer", steps 1 –5).

For LCD Timer Programming:
1. Program the timer (☞ p.17 "LCD Timer Programming", steps 1 – 5, making sure to input "0" for the channel number in step 3).

NOTE:
■ Select the programme you wish to record from your satellite receiver before you set the timer. If your satellite receiver does not have a timer, leave it switched on.

VPS Recording

Available from some TV stations, VPS (Video Program System) is a service which assures accurate timer recording. Special code signals are transmitted so your recorder starts and stops recording when the preset TV programmes actually start and end — even if there is a schedule change.

TO USE VPS SERVICE

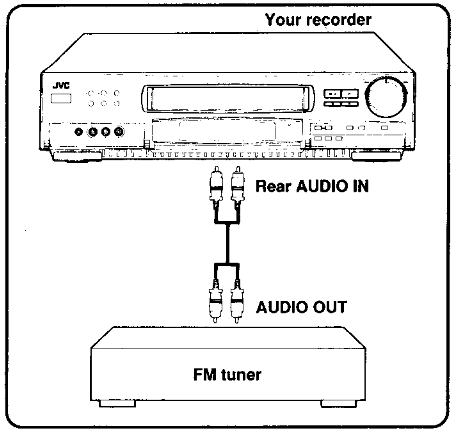
■ You do not have to cancel "VPS" even for non-VPS programmes, because those programmes will be recorded at the preset times.
■ If you wish to cancel "VPS", press the ⊡ button (the numeric key "7") on the remote control just before transferring the programmed data to the recorder. The ⊡ mark on the LCD will go out.

Locking The Recorder's Controls

To avoid unwanted operation and prevent accidental recording...
1. Press the remote control's OPERATE button to turn the recorder's power off. Keep this button pressed for about 2 more seconds after the power LED indicator has gone off.
   - ■ The Child Lock indicator (–) will appear on the display panel.
2. Child Lock is cancelled when you switch the recorder's power on with the remote's OPERATE button.
   - ■ Pressing the TIMER button during timer-recording also cancels the Child Lock mode.

NOTES:
■ While Child Lock is engaged, make sure you keep your remote control in a safe place inaccessible to children.
■ Timer-recording is possible in the Child Lock mode. After timer-recording is done, Child Lock remains in effect.

Simulcast Recording



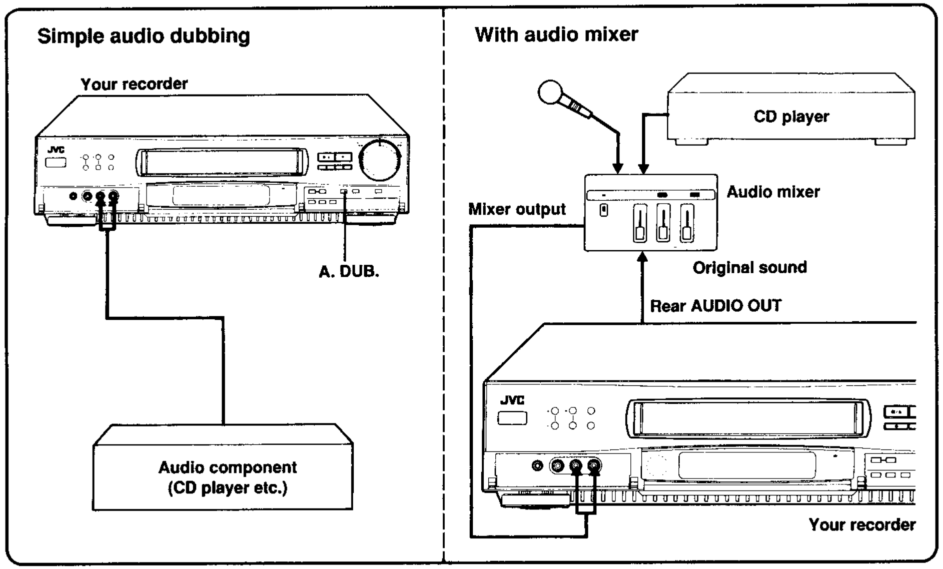
Your recorder lets you record an audio programme while recording a TV programme. In the Simulcast mode, the TV soundtrack is recorded on the normal audio track and the external audio programme is recorded on the Hi-Fi audio track, so you can have two independent programmes. If FM simulcast TV programmes are available, record the TV programme and its FM-broadcast soundtrack simultaneously.

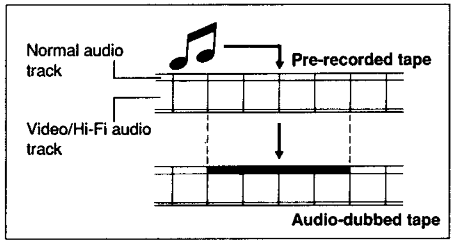
Preparation
■ Connect the FM tuner to the rear panel AUDIO IN connectors.
■ Set the FM tuner to the desired broadcast.

1. Press TV PROG. or the numeric key to select the TV programme you wish to record.
2. Select the Simulcast mode by pressing the SIMUL button.
   - ■ "SC" will appear on the display panel.
3. Press the Record button to start recording.

NOTES:
■ If you stop recording with the Pause/Slow button to avoid unwanted TV programme material, the audio programme is also cut.
■ After finishing simulcast recording, be sure to press the SIMUL button to cancel the Simulcast mode, otherwise it is not possible to record on the Hi-Fi track from the built-in tuner.

Audio Dubbing


Simple audio dubbing
Your recorder
A. DUB.
Audio component (CD player etc.)
With audio mixer
CD player
Audio mixer
Mixer output
Original sound
Rear AUDIO OUT
Your recorder


Normal audio track
Pre-recorded tape
Video/Hi-Fi audio track
Audio-dubbed tape

Audio dubbing replaces the normal audio sound of a previously recorded tape with a new soundtrack.

Preparation

Connect an audio component to the recorder's front panel A(Audio) L, R connectors. (For monaural equipment, use the L connector.)

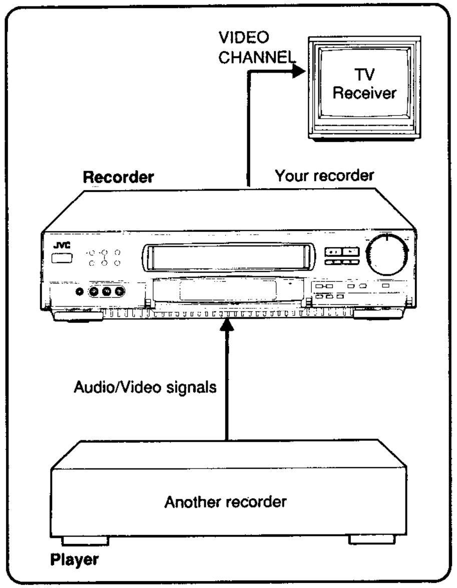
1. Select the recorder's external input mode by pressing numeric key "0". "F-AU" will appear instead of a preset number.
2. Start playback and engage the Still mode at the point from which you wish to start audio dubbing.
3. Press A. DUB.
4. Start playback of the audio source, and then press Play.
   - Audio dubbing will start.
5. Press Pause/Slow to stop audio dubbing temporarily.
6. Press Stop to stop audio dubbing.

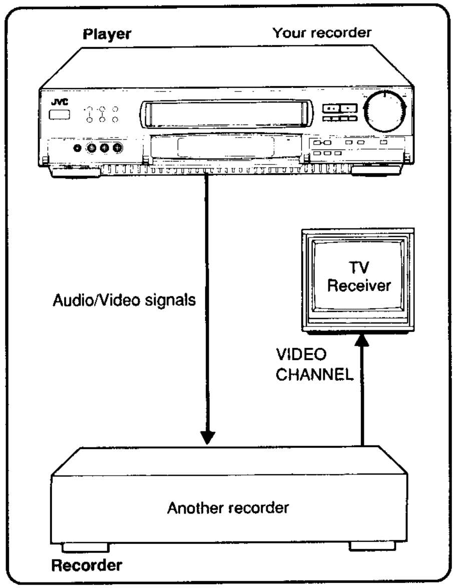
NOTES:

- When monitoring the sound during Audio Dubbing, the normal soundtrack will be automatically selected. If you wish to hear the mixed sound (Hi-Fi + normal soundtracks), press the Hi-Fi/NORM/MIX button to select the MIX mode. ☞ p.13.
- Audio dubbing will stop automatically at the counter reading of "0:00:00", and the recorder will enter the Play mode. Check the counter before starting audio dubbing.
- Audio dubbing is also possible with input via the rear panel AV1 IN/OUT or AV2 IN. In these cases, select the appropriate input mode:
  - With AV1 IN/OUT, press TV PROG. to select the AU 1 mode.
  - With AV2 IN, set the AV2/DECODER switch on the rear of the recorder to "AV2" and press numeric key "0" to select AU 2 mode.

- Connections made to the front panel V(Video) and A(Audio) input automatically override the rear panel AV input connection.
- Audio dubbing is not possible with cassettes whose safety tab has been removed.

Editing


VIDEO CHANNEL
TV Receiver
Recorder
Your recorder
Audio/Video signals
Another recorder
Player


Player
Your recorder
TV Receiver
Audio/Video signals
VIDEO CHANNEL
Another recorder
Recorder

Editing From Another Recorder

Preparation

- Connect another video recorder to the rear panel 21-pin AV1 or AV2 socket, or front panel A (Audio) and V (Video) connecters.
- Engage the external input mode:
  - If the player is connected to the front panel A(Audio) and V(Video) connectors, press TV PROG. until "F-AU" appears on the display panel.
  - If connected to the AV1 IN/OUT connector, press TV PROG. until "AU 1" appears on the display panel.
  - If connected to the AV2 IN connector, make sure the AV2/DECODER switch is set to "AV2", and press TV PROG. until "AU 2" appears.

1. Load the source tape in the player, and the recording tape in your recorder.
2. Select the recording speed (SP or LP).
3. Put your recorder in the Record-Pause mode.
4. Play back the source tape to search for scene to be edited.
5. Press the recorder's Play button where you want to start editing.
6. Press the recorder's Pause button to stop editing.
7. Repeat steps 4 through 6 to continue editing.

NOTE:

- Connections made to the front panel V(Video) and A(Audio) inputs automatically override the rear panel AV input connection. If you wish to edit with another machine connected to the rear input connector, make sure that there is nothing connected to the front connectors.

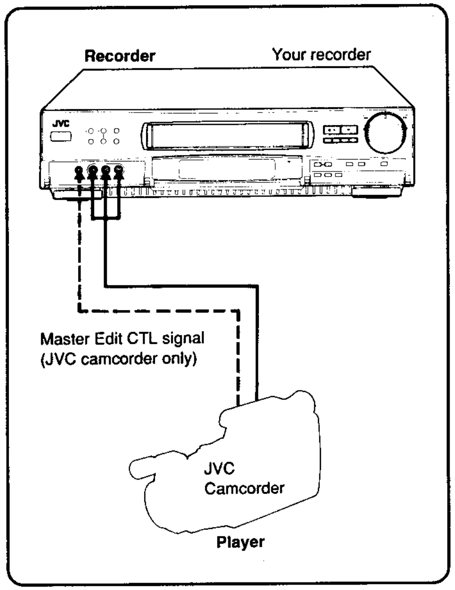
Editing To Another Recorder

Preparation

- Connect your recorder's 21-pin AV1 IN/OUT socket to the audio and video input connectors of the recording deck.
- Load the source tape in the player and the recording tape in the recorder.
- Engage the recorder's AUX mode.

1. Put the recorder in the Record-Pause mode.
2. Play back the source tape to search for a scene to be edited.
3. Press the recorder's Play button.
4. Press the recorder's Pause button to stop editing.
5. Repeat steps 2 through 4 to continue editing.

Editing (cont'd)



Editing From A JVC Camcorder

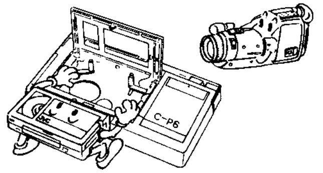
Preparation

- Connect the camcorder's AV OUT connector to the recorder's front panel V(Video) and A(Audio) connectors.
- Connect the AV output cable's mini-plug to the PAUSE terminal of the recorder.
- Press TV PROG. until "F-AU" appears on the display panel.

NOTES:

- If the camcorder is equipped with the Master Edit Control system, you can control the recorder using the camcorder's controls. See the camcorder's instruction manual for operating procedures.
- With this connection, you can also use the camcorder as a video camera for direct recording onto the recorder's tape. Put the recorder in Record-Pause and use the camcorder's start/stop trigger to start and pause recording. (For direct recording with a separate video camera, a camera adapter is necessary.)
- Connections made to the front panel Video and Audio input automatically override the rear panel AV input connection.

To Watch A Compact VHS Tape



Compact VHS camcorder recordings (PAL) can be played on your video recorder. Place the recorded cassette into a C-P6 Cassette Adapter and it can be used like any full-sized VHS cassette.

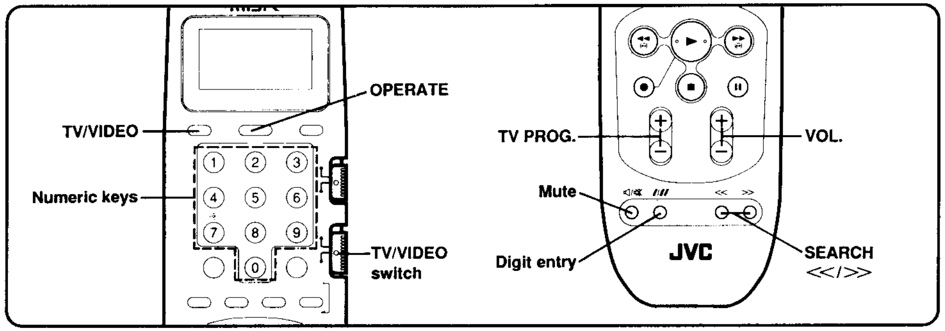
Remote A/B Code Switching

The remote control is capable of controlling two JVC video recorders independently; one set to respond to your remote control's A code control signals and another set to respond to B code control signals. The remote control is preset to send A code signals because your video recorder is initially set to respond to A code signals. You can easily modify your video recorder to respond to B code signals.

1. Unplug the recorder's power cord from the AC outlet.
2. Set the A/B CODE switch to B.
3. Plug the power cord back into the AC outlet. Do not use other remote controls at this stage.
4. Turn the recorder power on using the remote control's OPERATE button. The recorder will now only respond to B code signals.

NOTE:
Some TV sets may malfunction in response to the B mode. If this happens switch back to the A mode.

Using The Remote Control For TV Operation



TV Code Setting

Your remote control can operate the basic functions of your TV set. In addition to JVC televisions, other manufacturers' televisions listed on the right can also be controlled by setting the remote control to "TV". If your television is a JVC (Code 1), you don't have to set the TV code in step 2.

1. Set the TV/VIDEO switch to "TV".
2. While holding down the OPERATE button, press the numeric keys corresponding to the code number for your TV's brand.
   - Press OPERATE to turn the TV power on.
   - Press TV/VIDEO to switch the TV between TV and VIDEO (or AV) mode.
   - Press TV PROG. to select the TV's channel.
   - Press VOL. to adjust the TV's sound volume.
   - Press Mute to mute the TV's sound.
3. To operate your recorder, set the TV/VIDEO switch back to "VIDEO".

NOTE:

- The TV PROG. button does not function with televisions using Code 2.
- The TV/VIDEO button does not function with televisions using Code 3.
- With some televisions, the OPERATE button functions only to turn the TV power off, and the TV/VIDEO button functions only to switch the TV to the VIDEO (AV) mode.
- Whenever you replace batteries in the remote control, it is necessary to re-set the TV code if your television is not a JVC TV.

IMPORTANT
Although the provided remote control unit is compatible with JVC televisions, as well as many TV models manufactured by others, it is possible that the provided remote control will not work with your TV, or in some instances, will have limited function capability.

CODE	TV BRAND NAME
1	JVC
2	BRANDT, NORDMENDE, SABA, TELEAVIA, TELEFUNKEN, THOMSON
3	FERGUSON
4	PHILIPS
5	BLAUPUNKT, GRUNDIG
6	SONY
7	PANASONIC
8	PANASONIC
0	GRAETZ, ITT, LUXOR, SALORA, SELECO

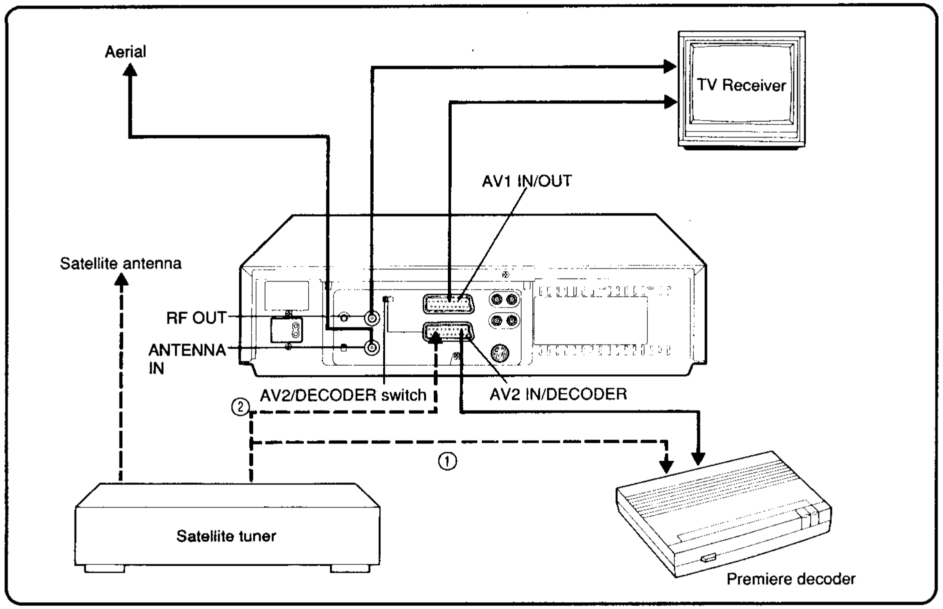
To Control Your Television With Additional Buttons

The numeric keys can also be used to select the TV's channel by setting the remote control to the TV mode.

1. Set the TV/VIDEO switch to "TV".
2. Use the numeric keys and the Digit entry button or the SEARCH <</>> buttons to select the TV's channel.
   - With televisions using Code 1, 3, 4, 6, 7 or 8 the Digit entry button corresponds to the 1-digit/2-digit entry switching button (often labelled -/--) of your TV's remote control.
   - With televisions using Code 1, 5 or 0, the SEARCH >> button corresponds to the 10 + button, and the SEARCH << button, to the 20 + button of your TV's remote control.

NOTE:
The way these buttons are used is determined by your TV. Use these buttons as instructed for your TV's remote control.

Information On "Premiere"



CONNECTIONS

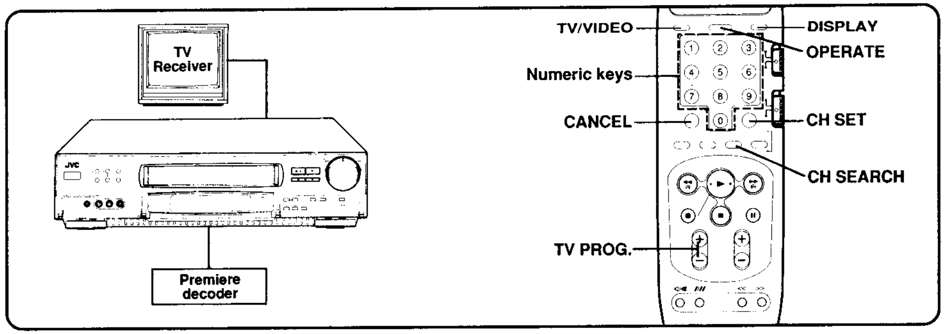
The AV2 IN/DECODER connector can be used as an input terminal for an external Premiere decoder. Simply connect a Premiere decoder and you can enjoy the variety of programming that is available through Premiere.

1. Connect your recorder and TV via their AV connectors (☞ p. 4, AV CONNECTION).
2. Set the AV2/DECODER switch on the recorder's rear panel to "DECODER".
3. Connect your recorder's AV2 IN/DECODER connector to the Premiere decoder's Euroconnector using a 21-pin SCART cable.

NOTE:

When connecting a satellite tuner...

- Connect the satellite tuner to the Premiere decoder ①, or if you don't have a Premiere decoder connect the satellite tuner directly to the vieo recorder ②.
- Set the AV2/DECODER switch on the rear panel to "AV2".
- To view a programme via the satellite tuner, select AU 2 mode by pressing TV PROG. until "AU 2" appears on the display panel.

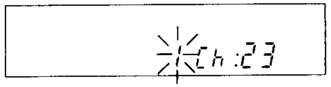


TUNING IN PREMIERE CHANNELS

Preparation

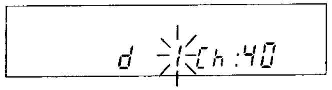
- Turn on the TV.
- Select VIDEO channel (or AV mode).

1. **Press OPERATE to turn on the recorder.**
2. **Press TV/VIDEO so that the VIDEO indicator is lit on the display panel.**
3. **Press CH SET.**
4. **Press CH SEARCH to start automatic scanning for receivable channels.**



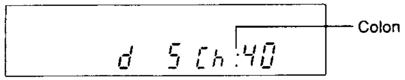
- Automatic scanning stops when a broadcast is detected.
- If the detected broadcast is not a scrambled Premiere broadcast, press CH SEARCH and continue search until a Premiere broadcast is found.

5. **Press TV/VIDEO when a scrambled Premiere broadcast is detected.**



- The programme will be descrambled. For normal (non-scrambled) broadcasts, do not press TV/VIDEO.

6. **Press numeric keys or TV PROG. to select the channel position where you wish to store that Premiere broadcast.**



7. **Press CANCEL to store the channel.**
   - The colon will disappear when the Premiere broadcast is stored.
8. **Press DISPLAY to disengage the Channel Set mode.**

WATCHING PREMIERE

Preparation

- Turn on the TV.
- Select VIDEO channel (or AV mode).

1. Press TV/VIDEO to select the VIDEO mode.
2. Choose a Premiere channel using the Numeric keys or TV PROG. just as you would with regular stations.

Watching One Programme While Recording Another

To watch a regular TV programme while recording a Premiere programme:

- Press the TV PROGRAM button on the TV's remote control and select the channel you want to watch.
- To watch the Premiere programme that is being recorded, press TV/VIDEO and select the VIDEO mode.

To watch a Premiere TV programme while recording a regular programme:

- Press the TV PROGRAM button on the TV's remote control and select the Premiere channel. After displaying a scrambled picture for a few seconds, the programme will become descrambled and a viewable picture will appear on the TV screen.

In Case Of Difficulty

POWER AND TAPE TRANSPORT PROBLEMS

Symptoms	Check points
No power is applied to the recorder.	■ Is the power cord disconnected? — Connect it.
Clock is functioning properly, but the recorder cannot be powered.	■ Is "TIMER" displayed on the display panel? — Press the TIMER button to extinguish the display..
Tape stops during rewind or fast-forward.	■ Is the C. MEMORY button pressed? — Press again to make "M" disappear from the display panel.

RECORDING PROBLEMS

Symptoms	Check points
Recording cannot be started.	■ Is a cassette loaded? ■ Is the safety tab on the cassette removed? — Reseal the slot with adhesive tape.
TV broadcasts cannot be recorded.	■ Has "external input" been selected? — Set to the desired channel.
Tape-to-tape editing is not possible.	■ Is the camcorder or another video recorder correctly connected? ■ Are all necessary power switches turned ON? ■ Has "external input" been selected? — Set to the correct input mode. (☞ p.21).
Camera recording is not possible.	■ Is the camcorder correctly connected? ■ Has "external input" been selected? — Set to the correct input mode. (☞ p.21)
Timer recording is not possible.	■ Have you set the clock correctly and programmed the timer correctly? — Check once again. ■ Is "TIMER" displayed on the display panel? — If not, press the TIMER button to display "TIMER".
Satellite programmes are not correctly timer-recorded.	■ Have you connected the satellite tuner to the recorder's AV2 IN/DECODER connector? — If not, make this connection. ■ Have you selected "AU 2" as the channel? — Make sure "AU 2" is selected as the recording channel.(☞ p.19)

PLAYBACK PROBLEMS

Symptoms	Check points
Playback picture does not appear while the tape is running..	■ If you are using RF OUT connection, is the TV receiver's channel selector set to the correct video channel? — Set it to the RF converter channel (UHF 36). (☞ p.5) ■ If you are using AV connection, is the TV receiver set to the AV mode? — Set it to the AV mode.
Noise appears during visual search.	■ This is normal.
Noise appears during normal playback.	■ Is the automatic tracking mode engaged? — Try manual tracking. (☞ p.12)
Noise appears during slow motion playback.	— Try manual tracking. (☞ p.12)
Noise appears during still playback.	— Press Pause/Slow a few times to remove the noise bars from the screen.
Playback picture is blurred or interrupted while TV broadcasts are clear.	■ Video heads may be dirty. — Head cleaning is necessary. Consult your JVC dealer. (☞ p.27)

Hi-Fi AUDIO PROBLEMS

Symptoms	Check points
TV sound cannot be recorded on Hi-Fi audio track.	■ Has the SIMUL button been pressed? — If "SC" appears on the display panel, cancel the Simulcast mode by pressing SIMUL button.
Breaks are noticeable in Hi-Fi audio reproduction.	■ Is "TIMER" displayed on the display panel? — Try manual tracking. (☞ p.12)

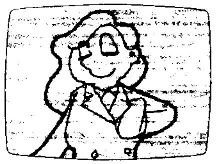
OTHERS

Symptoms	Check points
Whistling or howling is heard from TV during camera recording.	■ Move camcorder or camera's microphone away from TV or reduce TV sound volume.
Channel cannot be switched.	■ Is recording in progress? — Press the Pause/Slow button, change the channel, and press the Play button.
Remote control does not function.	■ Are the batteries discharged? — Replace with new ones. ■ Is the A/B code switch set to the appropriate position? ■ Is the TV/VIDEO code switch to the appropriate position? — Check once again.

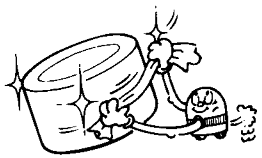
ATTENTION:
This recorder contains microcomputers. External electronic noise or interference could cause malfunctioning. In such cases, switch the power off and unplug the power cord. Then plug it in again and switch on. Take out the cassette. After checking the cassette, operate the unit as usual.

Special Note on Head Cleaning

Accumulation of dirt and other particles on the video heads may cause the playback picture to become blurred or interrupted. Although this model is equipped with a built-in head cleaner which automatically cleans the heads, reducing the likelihood of dirty heads, if such troubles are encountered please consult the nearest JVC dealer.



Auto Head Cleaner



A built-in head cleaner automatically cleans the video heads and head drum whenever a tape is loaded or unloaded to reduce head clogging.

Precautions

Please follow these safety precautions. Not doing so may result in damage to the recorder, remote control, or video cassette.

- **Avoid extreme heat and direct sunlight.**
- **Avoid extreme cold.**
- **Avoid extreme humidity.**
- **Avoid dust.**
- **Avoid places subject to vibrations.**
- **Avoid strong magnetic fields.**
- **Do not block the recorder's ventilation openings.**
- **Do not place anything heavy on the recorder or remote control.**
- **Do not place anything which might spill on top of the recorder or remote control.**
- **Do not place the recorder on cushions, pillows, or thick carpeting.**
- **Use the recorder in a stable, horizontal position only.**

Beware of moisture condensation

Moisture in the air will condense on the recorder when you move it from a cold place to a warm place, or under extremely humid conditions — just as water droplets form on the surface of a glass filled with cold liquid. Moisture condensation on the head drum will cause damage to the tape. In conditions where condensation may occur, keep the recorder's power turned on for a few hours to let the moisture dry.

When transporting

- ■ Be sure to remove cassette from recorder before packing.
- ■ Avoid violent shocks to the recorder during packing and transport.

Place cassettes in cassette cases and store vertically.

Specifications

GENERAL

Power requirement	: AC 220 – 240 V∿, 50/60 Hz
Power consumption	: 29 W
Temperature	
Operating	: 5°C to 40°C
Storage	: –20°C to 60°C
Dimensions (WxHxD)	: 435 x 104 x 336 mm
Weight	: 5.5 kg
Format	: VHS PAL standard
Maximum recording time (SP)	: 240 min. with E-240 video cassette
(LP)	: 480 min. with E-240 video cassette

VIDEO/AUDIO

Signal system	: PAL-type colour signal and CCIR monochrome signal, 625 lines/50 fields
Recording system	: Rotary two-head helical scan system with slant double-azimuth combination video heads
Signal-to-noise ratio	: 43 dB (Rohde & Schwarz noise meter)
Horizontal resolution	: 250 lines
Frequency range	: 70 Hz to 10,000 Hz (Normal audio) 20 Hz to 20,000 Hz (Hi-Fi audio)
Input/Output	: 21-pin scart connector x 2 : RCA connectors (VIDEO IN x 1, AUDIO IN x 2, AUDIO OUT x 1)

TUNER/TIMER

Channel coverage	: VHF 47 – 89/104 – 300/ 302 – 470 MHz UHF 470 – 862 MHz
Aerial output	: UHF channel 36 (Adjustable 32 – 40)
Memory backup time	: 60 min.

ACCESSORIES

Provided accessories	: Aerial cable, Infrared remote control unit, "R6" battery x 2, AC power cord
Optional accessory	: VPT adapter VU-V142E

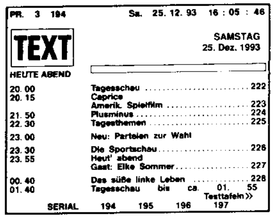
Specifications shown are for SP mode unless otherwise specified.
Design and specifications subject to change without notice.

Using The Optional Teletext Adapter

Teletext services have established themselves as one of the most flexible sources of information and broadcast schedules available to TV and video users. Your video recorder is ready to take full advantage of these services. By connecting an optional teletext adapter (☞ Specifications), you'll not only be able to view the vast number of teletext pages now available, you'll be able to transfer broadcast schedule data directly to your recorder's timer for instant, automatic timer programming. You'll also be able to make full use of your remote control's capabilities, with all the dual or triple function controls working as intended. Here are just a few examples of features available to you when you connect an optional teletext adapter.

TELETEXT

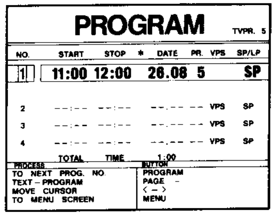
- ■ View broadcast teletext pages.
- ■ Several page access modes are available for quick, convenient location of pages you want to see.
- ■ You can program the video recorder's timer directly using TV schedule pages.



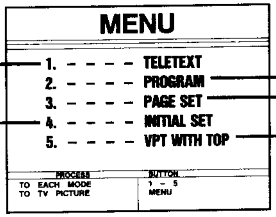
```
PR.  3  194              Sa.  25. 12. 93   16 : 05 : 46

TEXT                                        SAMSTAG
                                      25. Dez. 1993
HEUTE ABEND
20. 00        Tagesschau ........................ 222
20. 15        Caprice
              Amerik. Spielfilm ................. 223
21. 50        Plusminus ......................... 224
22. 30        Tagesthemen ....................... 225
23. 00        Neu: Parteien zur Wahl
23. 30        Die Sportschau .................... 226
23. 55        Heut' abend
              Gast: Elke Sommer ................. 227
00. 40        Das süße linke Leben .............. 228
01. 40        Tagesschau    bis    ca.   01.   55
                                     Testtafeln >>
        SERIAL     194     195     196     197
```

PROGRAM

- ■ Check timer recording data on the colour on-screen display.
- ■ Program the timer manually with the remote's numeric keys.



```
               PROGRAM                  TVPR. 5
NO.   START   STOP   *   DATE   PR.  VPS  SP/LP
 1    11:00 12:00    26.08  5              SP
 2    --:--   --:--     --.--  --  VPS     SP
 3    --:--   --:--     --.--  --  VPS     SP
 4    --:--   --:--     --.--  --  VPS     SP
      TOTAL    TIME      1:00
PROCESS                    BUTTON
TO  NEXT  PROG.  NO.       PROGRAM
TEXT - PROGRAM             PAGE  -
MOVE  CURSOR               < - >
TO  MENU  SCREEN           MENU
```



```
            MENU
  1. - - - - TELETEXT
  2. - - - - PROGRAM
  3. - - - - PAGE SET
  4. - - - - INITIAL SET
  5. - - - - VPT WITH TOP
      PROCESS          BUTTON
TO  EACH  MODE         1 - 5
TO  TV  PICTURE        MENU
```

PAGE SET

- ■ You can preset favourite or often-referred-to pages for immediate access.
- ■ Up to four pages can be stored on each of the numeric keys, for a total of 40 pages.

VPT WITH TOP

- ■ TOP automatic teletext timer programming.
- ■ Convenient colour-coded page access.
- ■ ""5.– – – – VPT WITH TOP" only appears when the video recorder's tuner is tuned to a station transmitting TOP broadcasts. (Applicable only in certain areas.)

INITIAL SET

LANGUAGE

- ■ Select one of four languages (English, German, Italian, or Swedish) for on-screen messages.

CLOCK ADJUST

- ■ Set the recorder's clock manually using the numeric keys.
- ■ Set the recorder's clock automatically by reading teletext time information.

SECTION 1
DISASSEMBLY

1.1 DISASSEMBLY

1.1.1 Top cover

1. Take out 4 screws Ⓐ and 1 screw Ⓑ.
2. To remove the top cover, slide in direction of arrow and lift away.

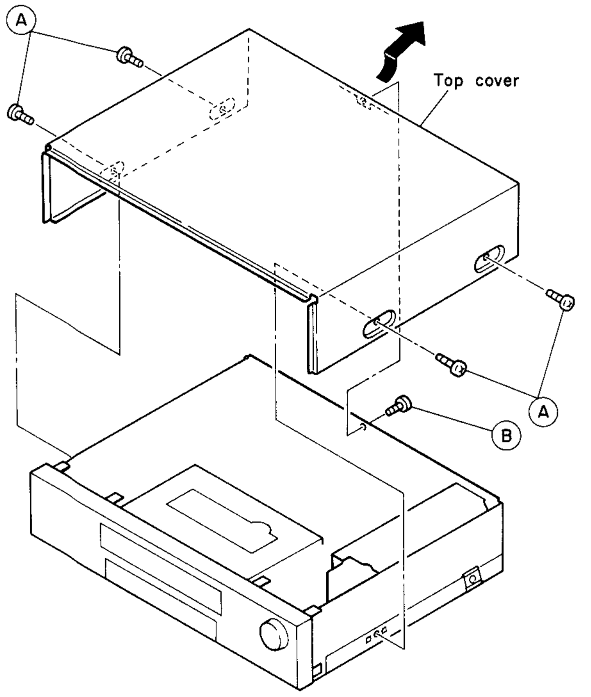

A
Top cover
A
B

Fig. 1-1-1 Top cover

1.1.2 Front panel assembly

1. Remove the top cover.
2. Carefully disengage 4 tabs ⓐ of the front panel assembly from the upper side of the chassis.
3. Pull the front panel assembly forward you to disengage 3 tabs ⓑ of the front panel assembly from the bottom of the chassis.
4. Disconnect connector ⓒ from the SHUTTLE assembly of the front panel assembly, then remove the front panel assembly.

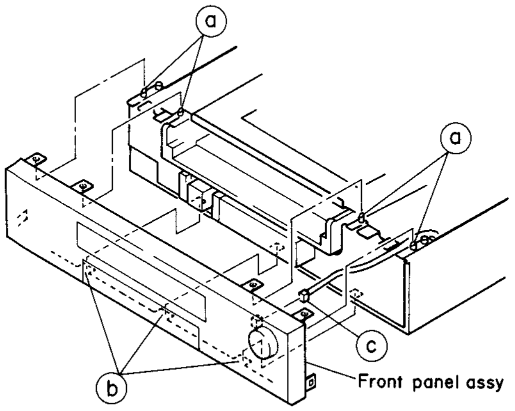

a
a
c
b
Front panel assy

Fig. 1-1-2 Front panel assembly

Note: *Install the front panel as shown in Fig. 1-1-3 and re-engage the tabs. Supply power and use a spare cassette to check for normal loading and eject operations.*

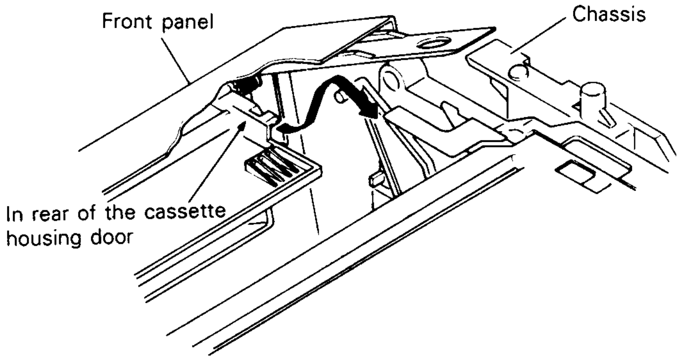

Front panel
Chassis
In rear of the cassette housing door

Fig. 1-1-3 Cassette housing door

1.1.3 Bottom cover

1. Remove the top cover, then overturn the set.
2. Take out 3 screws Ⓒ, then remove the bottom cover in the direction of arrow and lift away.
3. Disengage the 4 earth plate ⓐ.

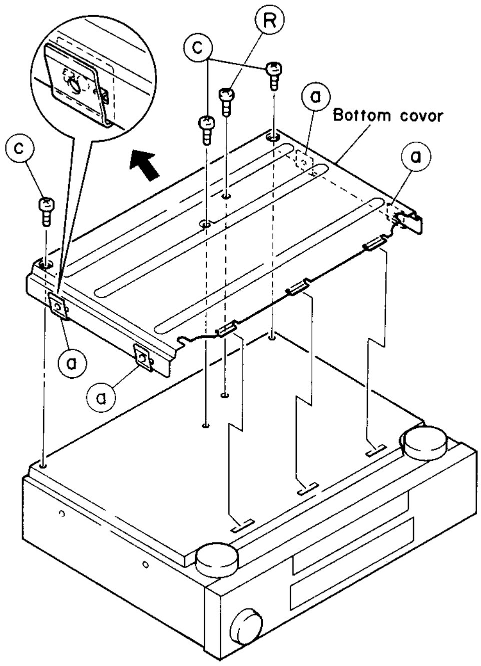

R
C
C
a
Bottom covor
a
a
a

Fig. 1-1-4 Bottom cover

1.1.4 SWITCHING REGULATOR board assembly

1. Remove the top cover.
2. Take out 3 screwsⒹ and 2 screwsⒺ.
3. Remove the SWITCHING REGULATOR board assembly.

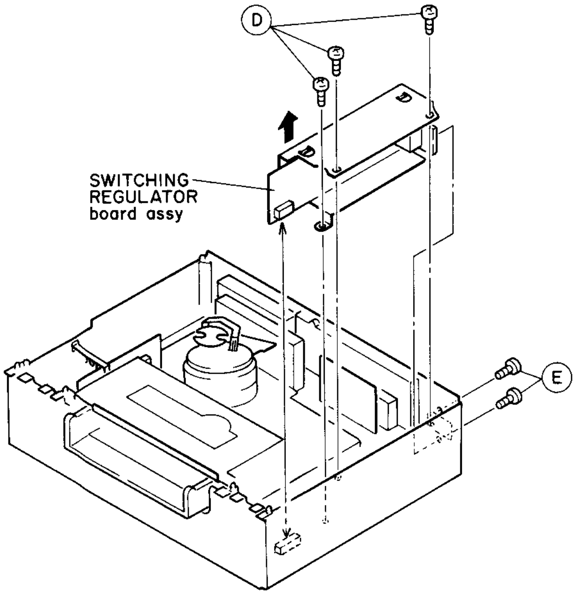

D
SWITCHING REGULATOR board assy
E

Fig. 1-1-5 SWITCHING REGULATOR board assembly

1.1.5 DISPLAY & SWITCH board assemblies

1. Remove the top cover and front panel.
2. Disengage 6 clawsⓐand 4 clawsⓑfrom the chassis.
3. Disconnect connector CN1 from the DISPLAY board assembly.
4. Disconnect 3 connectors CN101,CN102 and CN103 from the SWITCH board assembly.
5. Remove the DISPLAY & SWITCH board assemblies in direction of arrow.

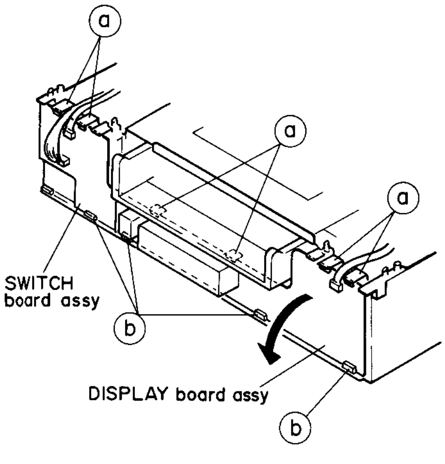

a
a
a
SWITCH board assy
b
DISPLAY board assy
b

Fig. 1-1-6 DISPLAY & SWITCH board assemblies

1.1.6 Cassette housing assembly

Note: *When install or remove the cassette housing assembly, be sure set the Eject position of mechanism condition.*

1. Remove the top cover and front panel.
2. Take out 2 screwsⒻand 2 screws Ⓜ, tilt up the cassette housing assembly in direction of arrow.
3. Disengage 2 tabsⓐand remove the cassette housing assembly.

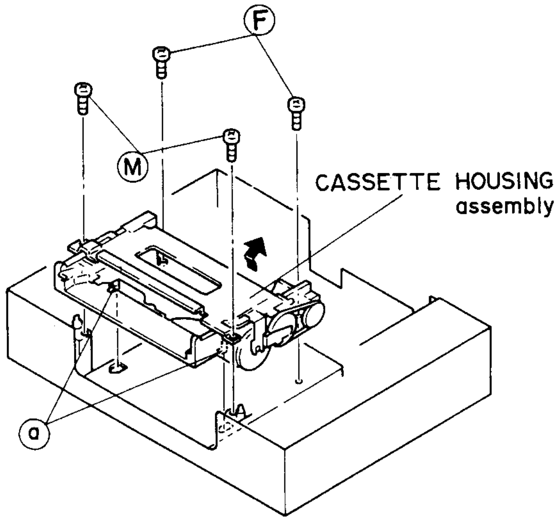

F
M
CASSETTE HOUSING assembly
a

Fig. 1-1-7 Cassette housing assembly

1.1.7 PRE/REC board assembly

1. Remove the top cover.
2. Take out 2 screws Ⓖ.
3. Disconnect connector CN502 from the PRE/REC board assembly.
4. Remove the PRE/REC board assembly with the shield in direction of arrow.

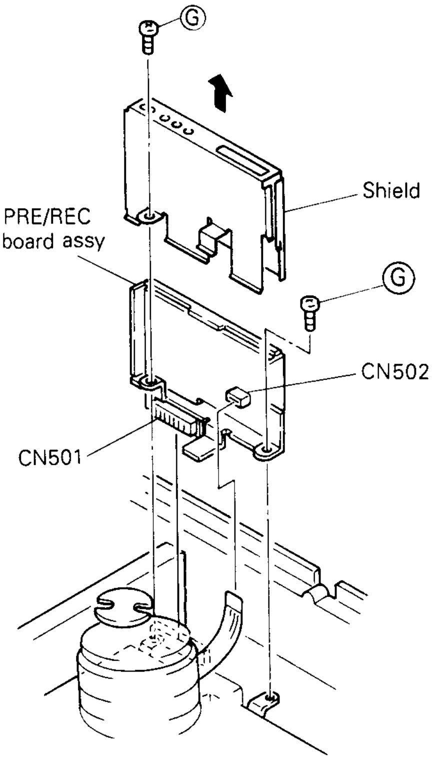

Ⓖ
Shield
PRE/REC board assy
Ⓖ
CN502
CN501

Fig. 1-1-8 PRE/REC board assembly

1.1.8 Main deck assembly

1. Remove the top cover, front panel and cassette housing assembly.
2. Take out 2 screws Ⓗ and remove the mecha bracket.
3. Take out 1 screw Ⓙ and 2 screws Ⓚ, then disengage 3 connectors ⓐ from the chassis.
4. Remove the main deck assembly in direction of arrow.

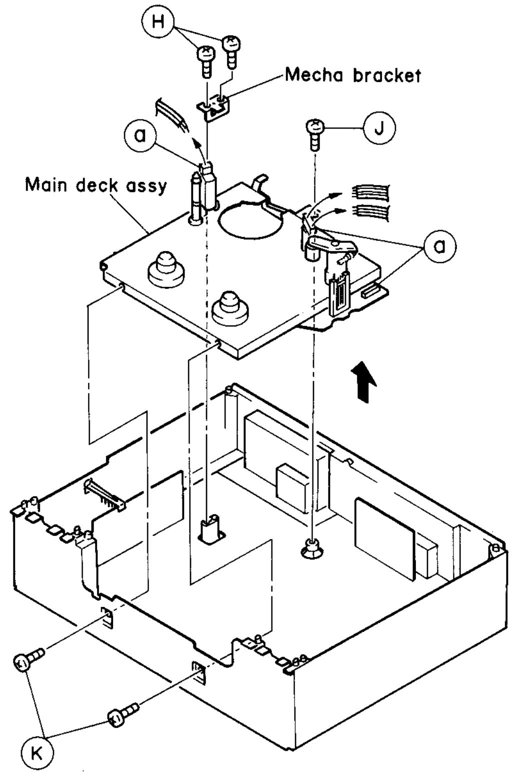

Ⓗ
Mecha bracket
ⓐ
Ⓙ
Main deck assy
ⓐ
Ⓚ

Fig. 1-1-9 Main deck assembly

1.1.9 DECK TERMINAL board assembly

1. Remove the main deck assembly.
2. Take out 4 screws Ⓛ.
3. Remove the capstan belt and washer.
4. Disconnect 1 connector ⓐ, disengage 2 tabs ⓑ, and remove the DECK TERMINAL board assembly.

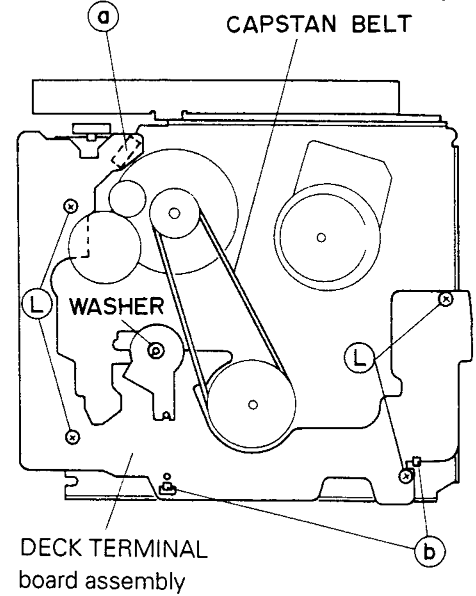

ⓐ
CAPSTAN BELT
Ⓛ
WASHER
Ⓛ
DECK TERMINAL board assembly
ⓑ

Fig. 1-1-10 DECK TERMINAL board assembly

1.1.10 MAIN board assembly

1. Remove the top cover.
2. Take out 6 screws Ⓝ and 1 screw Ⓟ from the chassis.
3. Remove the MAIN board assembly in the direction of arrow.

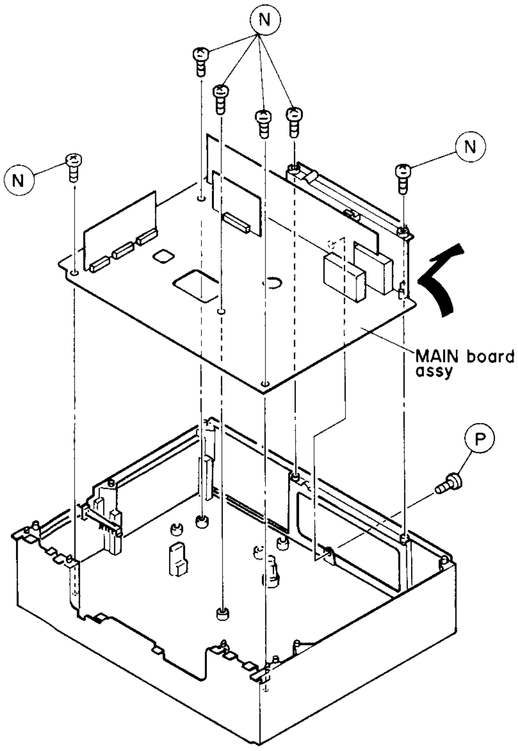

N
N
N
MAIN board assy
P

Fig. 1-1-11 Main board assembly

1.1.11 Service position

1. Remove the mechanism assembly (including cassette housing assembly), MAIN board assembly, SWITCHING REGULATOR board assembly, DEMODULATOR board assembly and DISPLAY & SWITCH board assemblies out of the chassis.
2. Re-connect all connectors, then overturn the mechanism assembly and board assemblies, as shown in fig. 1-1-12.
3. Check the pattern side of main board assembly.

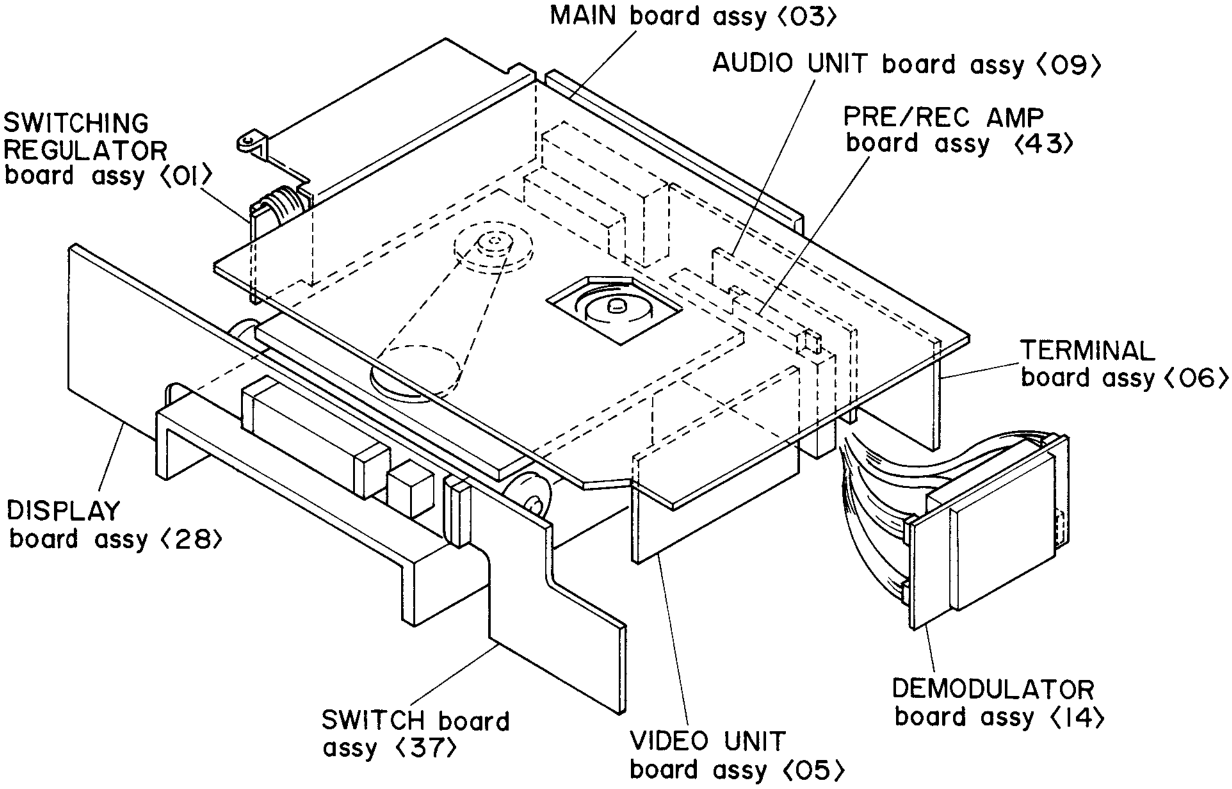

MAIN board assy 〈03〉
AUDIO UNIT board assy 〈09〉
SWITCHING REGULATOR board assy 〈01〉
PRE/REC AMP board assy 〈43〉
TERMINAL board assy 〈06〉
DISPLAY board assy 〈28〉
DEMODULATOR board assy 〈14〉
SWITCH board assy 〈37〉
VIDEO UNIT board assy 〈05〉

Fig. 1-1-12 Service position

SECTION 2
MECHANISM ADJUSTMENT

2.1 PREPARATION

2.1.1 Precautions

1) Disconnect VCR from AC power before soldering.
2) Avoid imparting stress to wires when disengaging connectors.
3) Determine and correct the cause of difficulty before proceeding to adjustments. Do not disturb settings unnecessarily.
4) Use care not to damage tabs, claws, etc. during repairs.
5) Install the cassette housing assembly only when the mechanism is in the Eject or Stop mode position. In the Eject mode, the internal holder of the housing is fully raised. This is fully lowered in the Stop mode.
6) When installing the front panel assembly, be sure to engage the housing door with the door lever of the cassette housing assembly. If this is omitted, the door will not open at Eject and the cassette cannot be removed.
   See Sec.1 DISASSEMBLY.

2.1.2 Check without cassette housing

Mechanism operations can be observed easily by removing the cassette housing assembly. Note the following.

1) Disconnect the power cord from the AC outlet, and remove the top cover, the front panel and the cassette housing assembly in this order.
2) Disable the photo transistor sensor (END SENSOR, START SENSOR) on the main-deck by applying an opaque cover.
3) Set the CASSETTE switch (push switch) to ON.
4) Release the LED GUIDE from the hook while removing it.
5) Connect the pwer cord to the AC outlet and turn on the POWER switch. Select the desired operation modes with the operation buttons or remote control unit. However, notice that without tape, setting for the RWD or FF direction modes produces the Stop mode after a few seconds later and power supply is cut off due to absence of the reel sensor output.

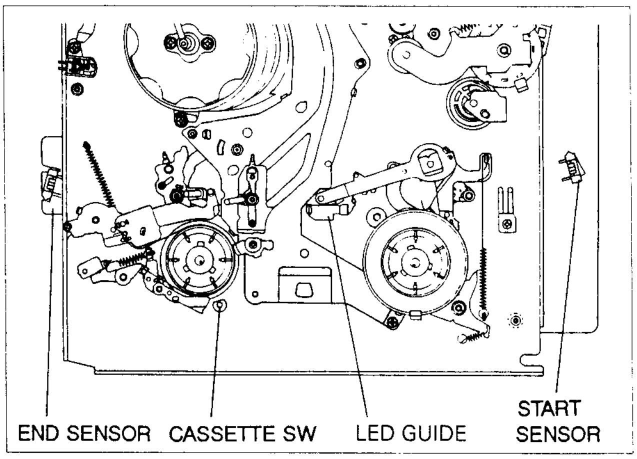


Fig. 2-1-1 Checking without cassette housing

2.1.3 Manual removal of loaded tape

In event of failure which leaves the tape in the loaded position, remove it by the following procedure.

1) Disconnect the power cord from the AC outlet, and remove the top cover and the front panel in this order.
2) Turn the loading motor on the main deck by hand in the direction of the arrow for unloading the tape. At that time, pay careful attention to the tape not to get soiled with grease.
3) Remove the cassette housing assembly.
4) Ture the reel of the cassette tape to take in the slack of the tape. During this work, hold down the cassette tightly by hand, otherwise it may damage the tape.
5) Take off the cassette from the cassette housing.

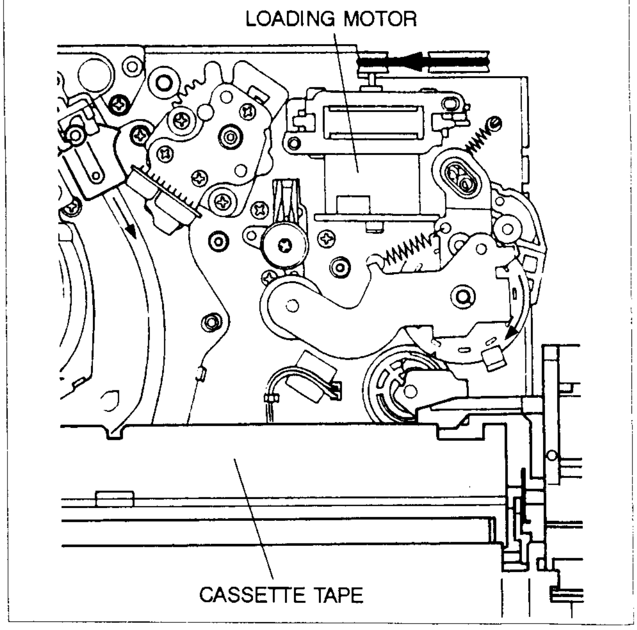


Fig. 2-1-2 Manual removal of loaded tape

2.1.4 Test equipment

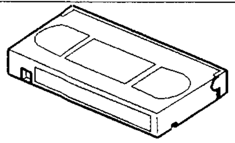
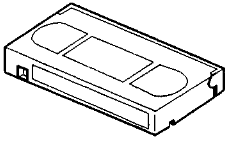
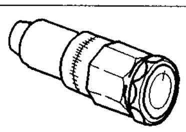
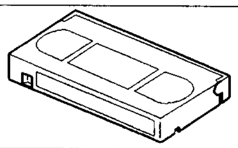
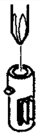
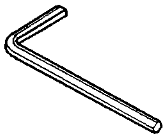
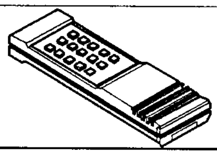
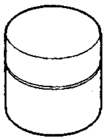
Alignment tape (SP) MH-2	Alignment tape (LP) MH-2L	Torque gauge PUJ48075-2	Back tension cassette gauge PUJ48076-2
			
A/C head positioning tool PTU94010	Line head wrench PGJ04033	Presetting unit PTU94008	Grease PTU94014A
			

Table 2-1-1

2.2 MAIN MECHANISM PARTS

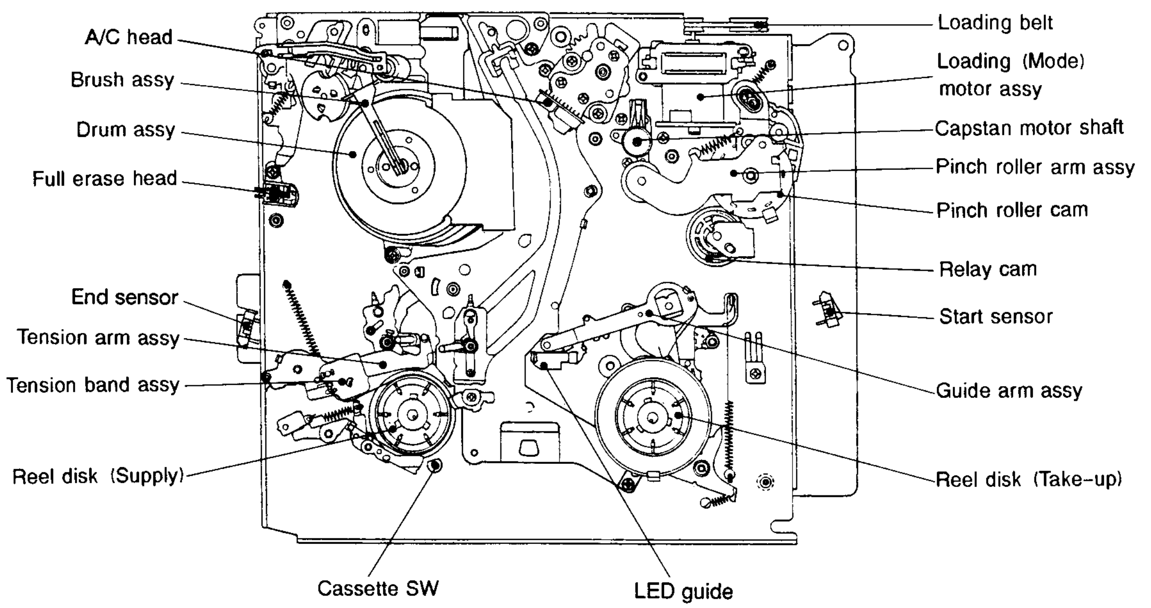

A/C head
Brush assy
Drum assy
Full erase head
End sensor
Tension arm assy
Tension band assy
Reel disk (Supply)
Cassette SW
LED guide
Loading belt
Loading (Mode) motor assy
Capstan motor shaft
Pinch roller arm assy
Pinch roller cam
Relay cam
Start sensor
Guide arm assy
Reel disk (Take-up)

Fig. 2-2-1 Top view of main-deck

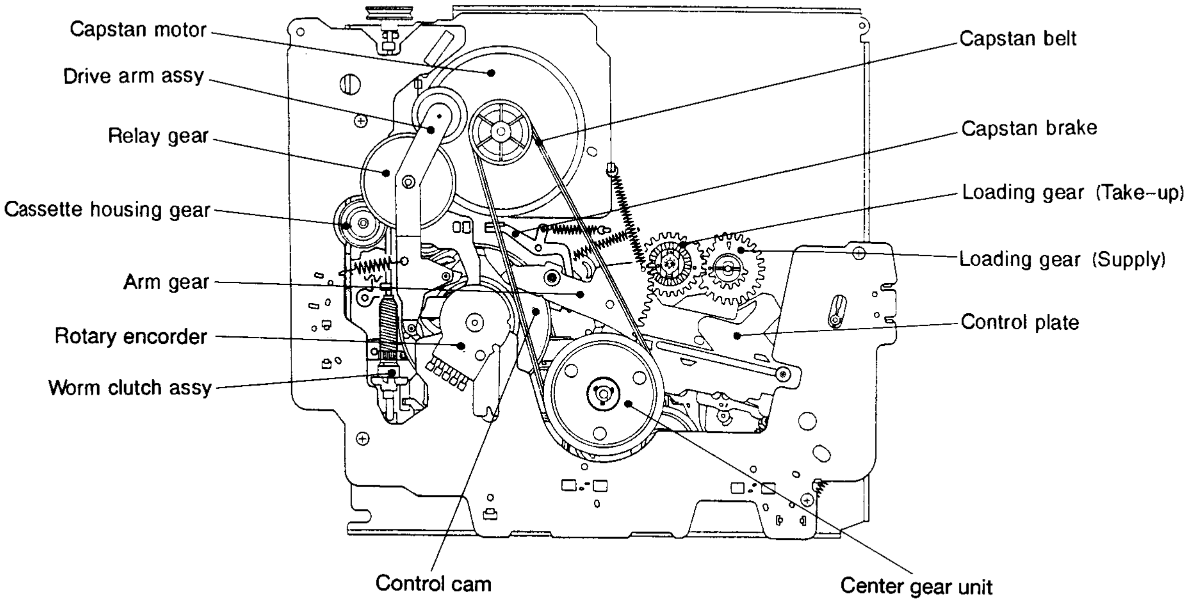

Capstan motor
Drive arm assy
Relay gear
Cassette housing gear
Arm gear
Rotary encorder
Worm clutch assy
Control cam
Center gear unit
Capstan belt
Capstan brake
Loading gear (Take-up)
Loading gear (Supply)
Control plate

Fig. 2-2-2 Bottom view of main-deck

2.2.1 Cleaning

Periodic cleaning of the tape transport system is desirable, but ordinarily not feasible in practice. Therefore, perform cleaning when a set is brought in for repairs or maintenance. Contamination of the video heads, tape guides and brushes can detract from playback picture quality and in extreme cases, even damage the tape. For cleaning, use a fine-mesh cotton cloth (about the texture of a white dress-shirt) moistened in alcohol.

- To clean the video heads, press the moistened cloth gently against the upper drum with finger-tip and turn the drum by hand.
- Do not use a vertical stroke, as this may damage the heads.

2.2.2 Lubrication

Oil and grease do not normally require periodic replenshing. Apply only when replacing lubricated parts (also clean and replace lubrication of mating parts if soiled).
For parts and points to apply oil and grease, refer to the exploded views of the mechanism assembly.
Before oiling, clean with alcohol.
Apply one or two drops of oil.
Avoid excess oil.

1) Table 2-2-1 indicates the oil and grease used in this set. Use these or recommended locally available equivalents.

Category	Part No.
Oil	COSMO-HV56
Grease	KANTO-G-31KAV

Table 2-2-1

2) Grease is not required for a replacement cassette housing assembly, as this has been applied at the factory.

Note: *Stir grease that has been stored for an extended period.*

2.3 INSPECTION AND MAINTENANCE

This product employs rotary and moving parts which wear out in the course of usage. Periodic inspection, cleaning, lubrication and maintenance are therefore important for ensuring maximum performance. Worn parts must also be replaced at when required.

2.3.1 Suggested servicing schedule for main components

The following table indicates the suggested period for such service measures as cleaning, lubrication and replacement. In practice, the indicated periods will vary widely according to environmental and usage conditions. However, the indicated components should be inspected when a set is brought for service and the maintenance work performed if necessary.
Also note that rubber parts may deform in time, even if the set is not used.

System	Parts Name	Operation hours						
		250	500	750	1000	1250	1500	2000
Tape Transport	Upper drum assy	★	★	★	○	★	○	○
	A/C head	★			○			○
	Pinch roller arm assy	★	★	★	★	★	★	★
	Full erase head							
	Tension arm assy							
	Lower drum motor assy							
	Capstan motor (Shaft)							
Drive	Capstan motor							○
	Capstan belt			○				○
	Mode motor assy							○
	Loading belt			○				○
	Reel disk (Supply)							○
	Reel disk (Take-up)							○
	Clutch assy							○
	Worm clutch assy							○
Brake	Sub brake assy			○				○
	Main brake assy			○				○
	Sub brake			○				○
	Tension band assy							○
Others	Brush assy			★				○
	Tension band assy							○

★ : Cleaning
○ : Inspection or Replacement if necessary

Table 2-3-1

2.4 MECHANISM DISASSEMBLY & INSTRATION

2.4.1 Disassembly of Mechanism

1. Precaution before disassembling mechanism

This mechanism has an exclusive operation mode provided for disassembling and instration the mechanism, and it is suggested to set the mechanism to this mode before disassembly and instration. The exclusive mechanism operation mode is not generally used and becomes available by manual setting only.

Note: *Although the mechanism can be disassembled as it is set in the EJECT mode, it is recommended to set it to the exclusive mechanism operation mode.*

2. Setting of exclusive mechanism operation mode

Turn the Pinch Roller Cam clockwise as viewed from the upper side so as to rotate the Loading Motor in the direction of the arrow, while adjusting positions of the Pinch Roller Cam and the Relay Cam so that their markings coincide with each other as shown in Fig. 2-4-2.
At that time, both the pole bases should be moved to the full extent in the direction of the Reel Base Assembly (supply side).

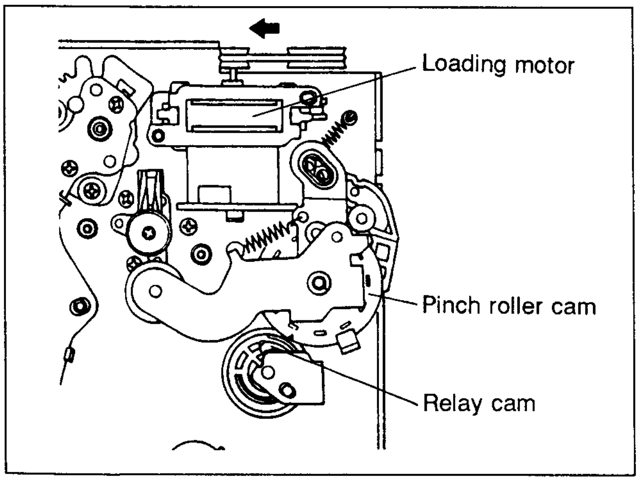


Fig. 2-4-1

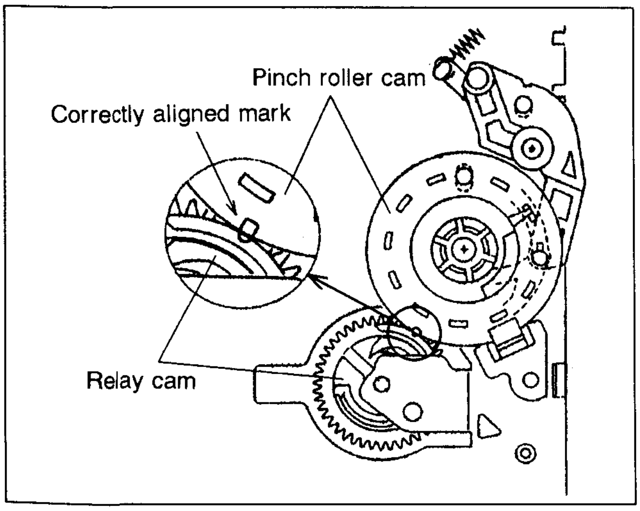


Fig. 2-4-2

3. Disassembling of mechanism assembly in the lower side

1) Unsolder the Rotary Encoder from the DECK TERMINAL board (at five points) and remove the slit washer (1') . Release the Rotary Encoder from the hooks in the both sides while removing it for replacing.
When the Rotary Encoder need not to replace, remove the slit washer only and take off the Rotary Encoder as it is soldered to the DECK TERMINAL board.
2) Remove the tension spring (2") and the slit washer (2') while taking off the Drive Arm Assembly.
3) Remove the Relay Gear.

No.	Part name
1	Rotary encoder
1'	Slit washer
2	Drive arm assembly
2'	Slit washer
2"	Tension spring
3	Relay gear

Table 2-4-1

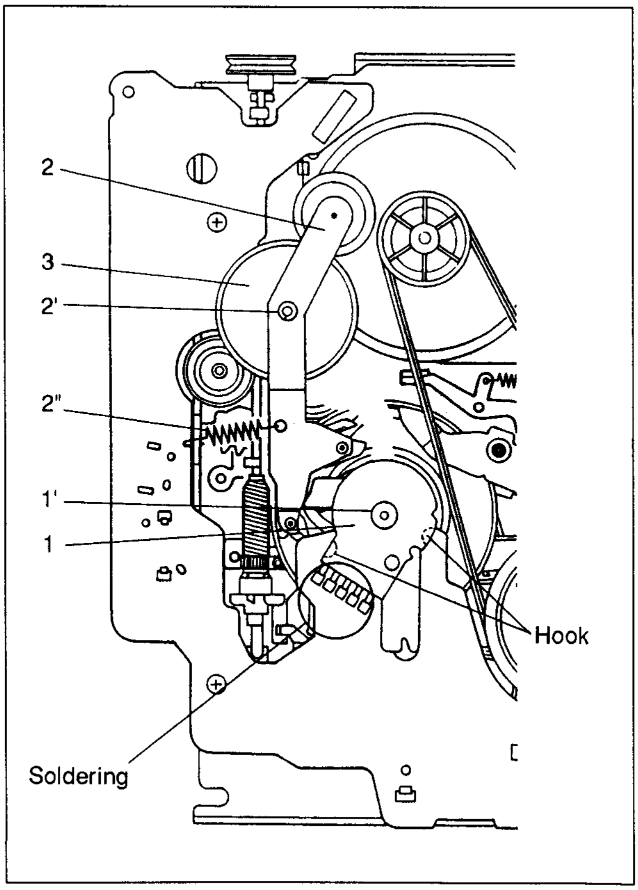


Fig. 2-4-3

4) Disengage the CAPSTAN belt.
5) Remove the 4 screws (5'), disconnect the connector (CN2), and disengage the 2 hooks. Then remove the DECK TERMINAL board.

No.	Part name
4	Belt
5	Deck terminal board assembly
5'	Screws (x4)
5"	Connector (CN2)

Table 2-4-2

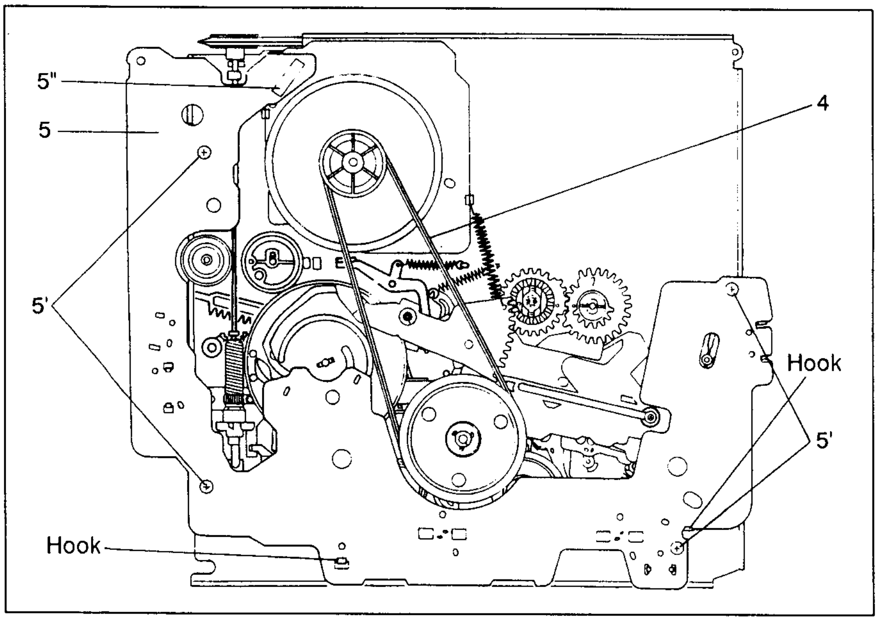


Fig. 2-4-4

6) Remove the slit washer (6') and the tension spring (6") while taking off the Arm Gear.
7) Expand the two center hooks outwards while removing the Control Cam. Carefully do this work not to damage the hooks.
8) Remove the slit washer (8') and the Center Gear Unit.
9) Disengage the loading belt, and release the Worm Clutch Assembly from the 3 hooks while taking it off. Carefully do this work not to damage the hooks.
10) Remove the slit washer (10') and the Control Plate.

No.	Part name
6	Arm gear
6'	Slit washer
6"	Tension spring
7	Control cam
8	Center gear unit
8'	Slit washer
9	Worm clutch assembly
9'	Belt
10	Control plate
10'	Slit washer

Table 2-4-3

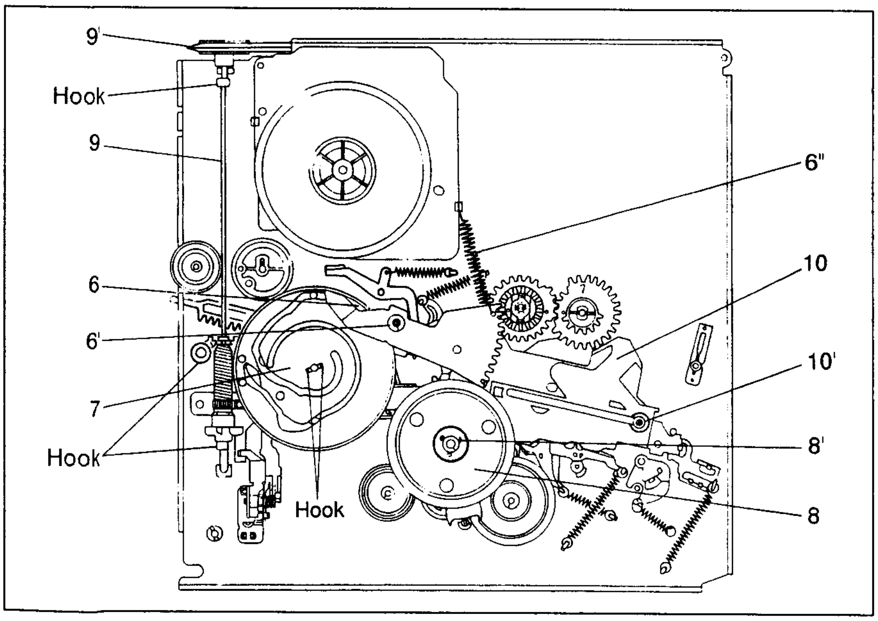


Fig. 2-4-5

11) Disengage the tension spring (11') and remove the Capstan Brake.
12) Disengage the tension spring (12') by a side, and release the Slide Plate from the two hooks while taking it off.
13) Remove the slit washer (13') and the Cassette Housing Gear.
14) Spread out the center hook of the Relay Cam with care not to damage the hook, and remove the Relay Cam.
15) Pull out the S-switch (S-VHS) pin, which requires careful attention not to lose it because it becomes free when the DECK TERMINAL board is removed.
16) Set the Slide Base Assembly free, then move it upwards while removing it.
17) Remove the Reset Lever.
18) Remove the Idler Unit.
19) Disengage the tension spring (19') by a side, and remove the Idler Cancel Lever.
20) Remove the slit washer (20') of the Clutch Gear Unit (TU side) and take it off.
21) Remove the slit washer (21') of the Clutch Gear Unit (SUP side) and take it off.
22) Expand the two outer hooks in the center of the Loading Gear (TU side) and take off the Loading Gear. Carefully do this work not to damage the hooks.
23) Remove 1 screw (23') and the arm of the Loading Gear Assembly (SUP side), and release the Loading Gear Assembly (SUP) from the 2 hooks by expanding them while taking it off in the free status. During this work, pay careful attention to the hooks not to damage them.
24) Disengage the tension spring (24') by a side and escape the Main Brake Assembly from the center hook while taking it off.
25) Disengage the tension spring (25') by a side and take off the Take-up Lever.
26) Disengage the tension spring (26') by a side and escape the Off Lever Assembly from the center hook while taking it off.
27) As the Slider Assembly on the upper side of the deck is removed, disengage the tension spring (27') and expand the center hook while taking off the Tension Lever Assembly.
28) Disengage the tension spring on the upper side of the deck, and mode the spring base upwards to remove it.
29) Remove the 3 screws from the upper side of the deck, release the Capstan Motor from the 2 hooks on the lower part of the deck while taking off the motor.

No.	Part name
11	Capstan brake assembly
11'	Tension spring
12	Slide plate
12'	Tension spring

Table 2-4-4

No.	Part name
13	Cassette housing gear
13'	Slit washer
14	Relay cam
15	S-SW pin (S-VHS)
16	Slide base assembly
17	Reset lever
18	Idler unit
19	Idler cancel lever
19'	Tension spring
20	Clutch gear unit (TU)
20'	Slit washer
21	CLutch gear unit (SUP)
21'	Slit washer
22	Loading gear (TU)
23	Loading gear assembly (SUP)
23'	Screw
24	Main brake assembly (SUP)
24'	Tension spring
25	Take-up lever
25'	Tension spring
26	OFF lever assembly
26'	Tension spring
27	Tension lever assembly
27'	Tension spring
28	Spring base
29	Capstan Motor

Table 2-4-5

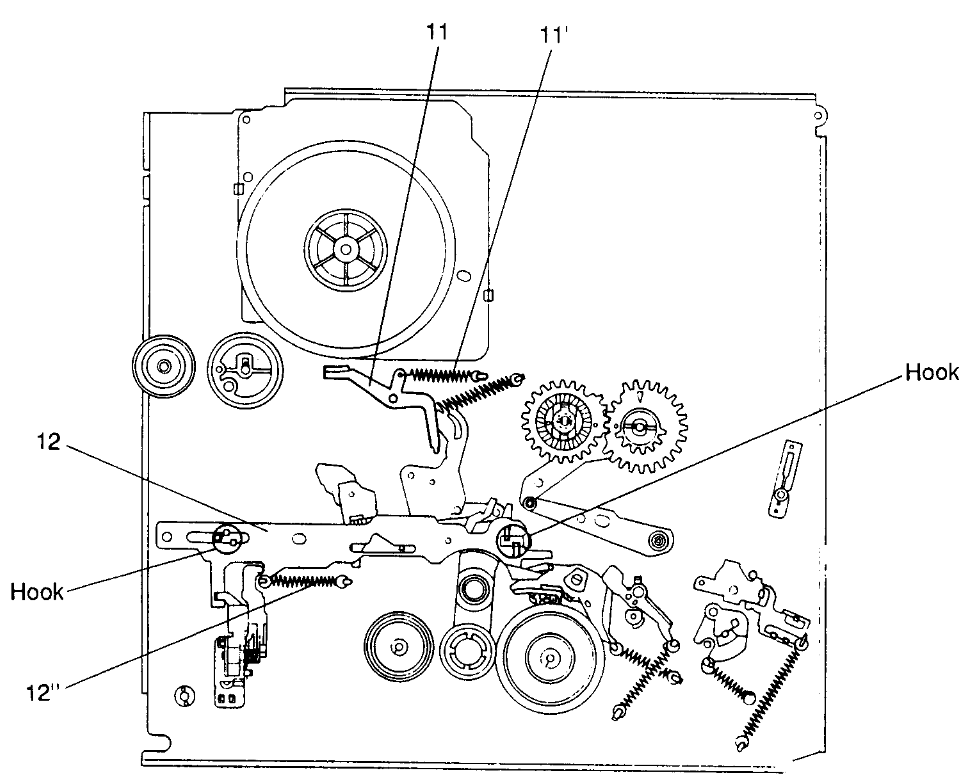

11
11'
Hook
12
Hook
12''

Fig. 2-4-6

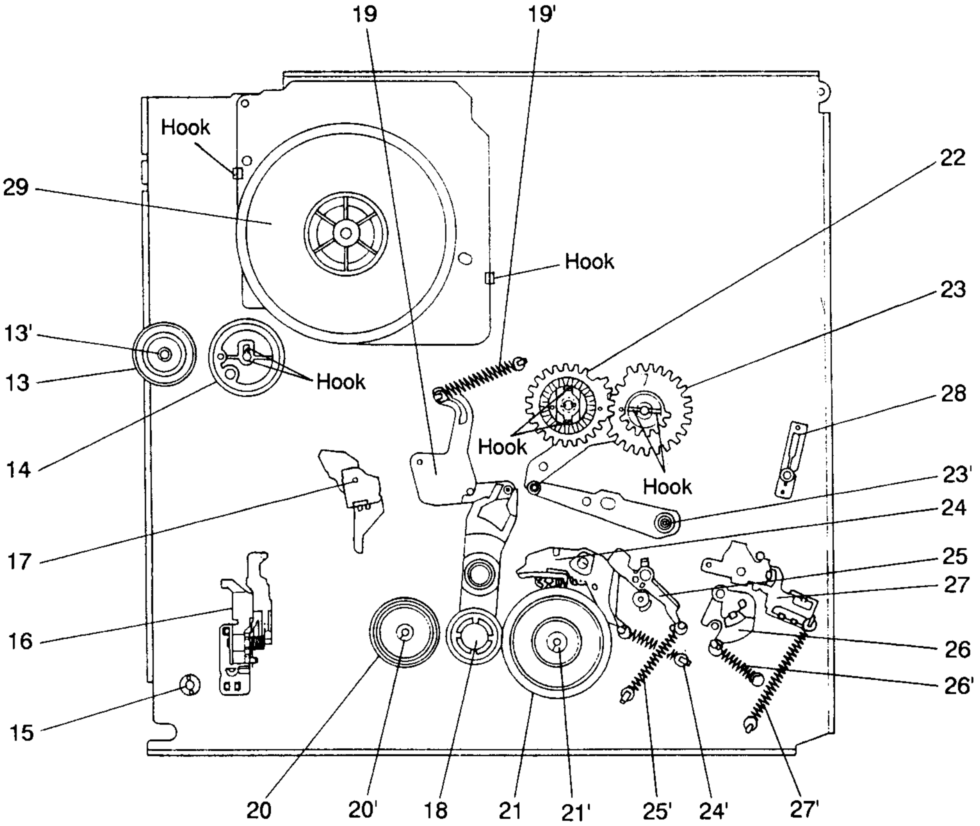

19
19'
Hook
22
29
Hook
23
13'
13
Hook
28
14
Hook
Hook
23'
24
17
25
27
16
26
26'
15
20
20'
18
21
21'
25'
24'
27'

Fig. 2-4-7

4. Disassembling of mechanism assembly in the upper side

1) Remove the slit washer (1'), the Pinch Roller Arm Assembly and the compression spring (1") in this order.
2) Release the Pinch Roller Cam from the hook while taking it off.
3) Disengage the compression spring (3') and take off the Pinch Roller Lever.

No.	Part name
1	Pinch roller arm assembly
1'	Slit washer
1"	Compression spring
2	Pinch roller cam
3	Pinch roller lever
3'	Compression spring

Table 2-4-6

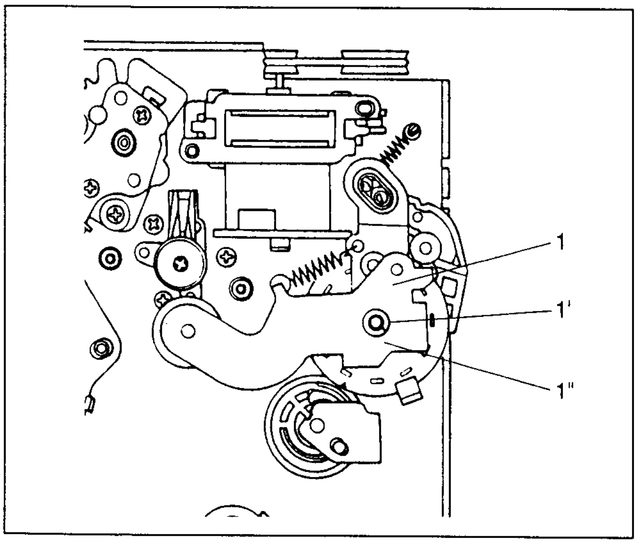


Fig. 2-4-8

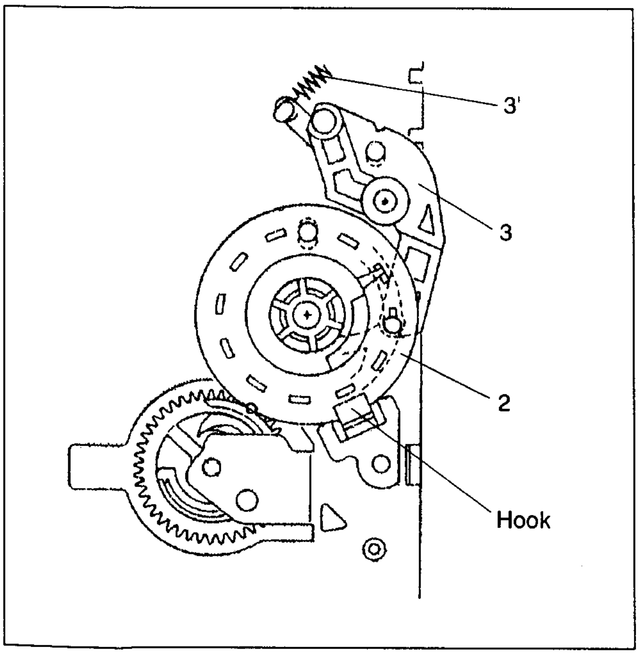


Fig. 2-4-9

2.4.2 Instration of mechanism

1. Precaution before reassembling mechanism

Check that all the mechanism parts on the upper side of the deck are set in the exclusive mechanism operation mode.

2. Instration of mechanism assembly parts in the lower side

1) Install the Capstan Motor and tighten it with 3 screws from the upper side of the deck.
2) Install the Spring Base and engage the tension spring on the upper side of the deck.
3) Install the Tension Lever Assembly and engage the tension spring (3').
4) Install the Off Lever Assembly and engage the tension spring (4').
5) Install the Take-up Lever and engage the tension spring (5').
6) Install the Main Brake (SUP side) and engage the tension spring (6').
7) Install the Loading Gear Assembly (SUP side) and fix the arm and the Pole Base Assembly with a screw (7').
8) Confirm the mechanism mode that is set to the exclusive mechanism operation mode, and install the Loading Gear (TU side) with the hole glined with the hole on the Loading Gear Assembly (SUP side) as the Tension Arm is returned to the front side.
9) Install the Clutch Gear (SUP side) and the slit washer (9') with care not to contact with the Main Brake.
10) Install the Clutch Gear Unit (TU side) and the slit washer (10').
11) Install the Idler Cancel Lever and engage the tension spring (11').
12) Install the Idler Unit.
13) Install the Reset Lever.
14) Install the Slide Base Assembly with care of re-engaging the tension spring on the upper side of the deck.
15) Install the S-switch (S-VHS) pin.
16) Install the Relay Cam whith the hole aligned with hole on the chassis.
17) Install the Cassette Housing Gear and the slit washer (17').

No.	Part name
1	Capstan Motor
2	Spring base
3	Tension lever assembly
3'	Tension spring
4	OFF lever assembly
4'	Tension spring
5	Take-up lever
5'	Tension spring
6	Main brake assembly (SUP)
6'	Tension spring
7	Loading gear assembly (SUP)
7'	Screw
8	Loading gear (TU)

Table 2-4-7

No.	Part name
9	Clutch gear unit (SUP)
9'	Slit washer
10	Clutch gear unit (TU)
10'	Slit washer
11	Idler cancel lever
11'	Tension spring
12	Idler unit
13	Reset lever
14	Slide base assembly
15	S-SW pin (S- VHS)
16	Relay cam
17	Cassette housing gear
17'	Slit washer

Table 2-4-8

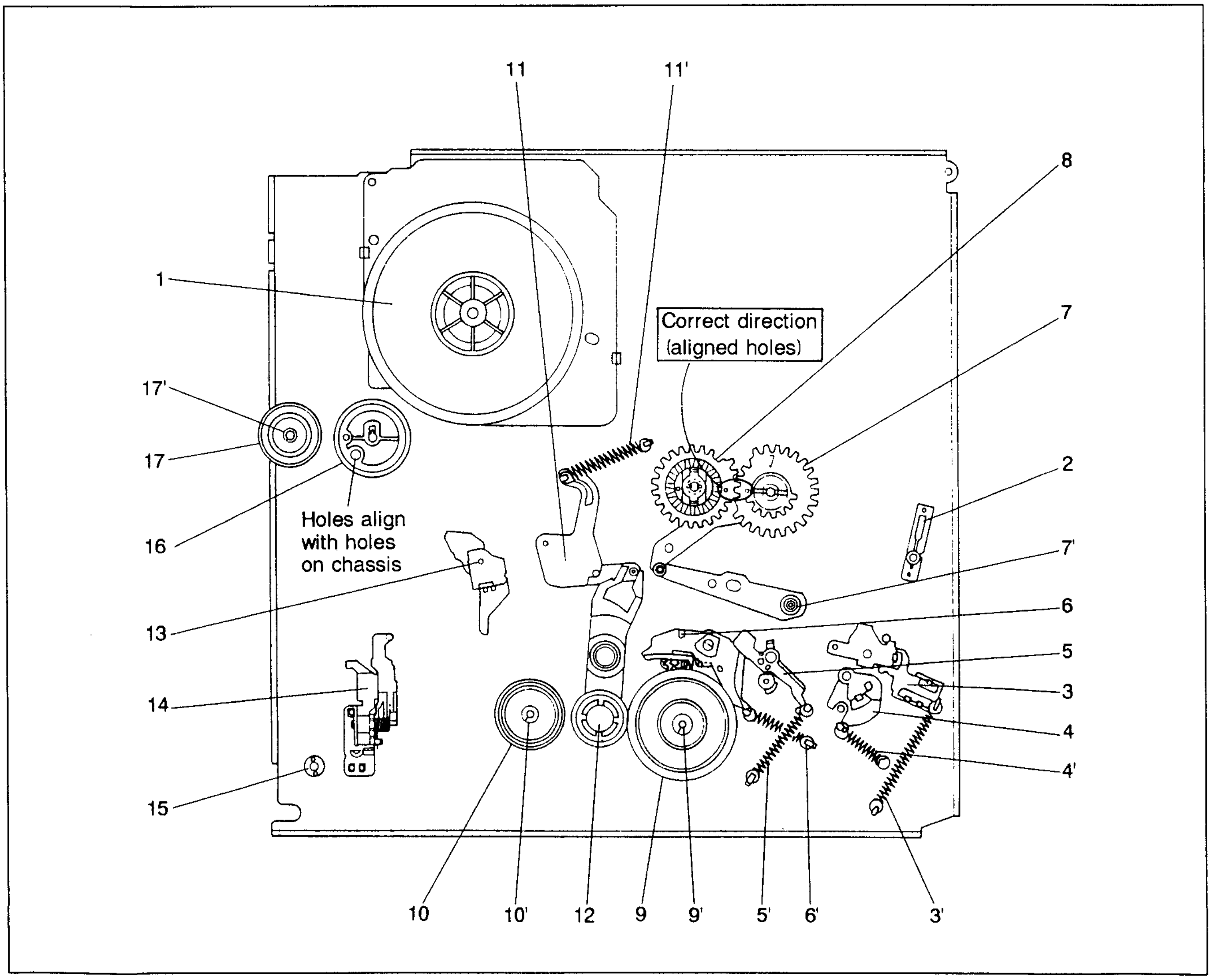

11
11'
8
1
Correct direction
(aligned holes)
7
17'
17
2
16
Holes align
with holes
on chassis
7'
13
6
5
3
14
4
4'
15
10
10'
12
9
9'
5'
6'
3'

Fig. 2-4-10

18) Install the Slide Plate with the lower stud of the Main Brake (TU side) set in the groove, and engage the tension spring (18'). Set the Slide Plate on the deck with the hole aligned with the hole on the chassis in the stage to install the mechanism parts on the upper side of the deck.

Note: *If the Slide Plate is pulled to the phase adjusting position in the above mentioned state, the Main Brake (SUP side) catches the tip of Slide Plate and it is locked accordingly. Do not continue reassembling of the mechanism parts in this condition to prevent the Slide Base Assembly from getting damaged.*

19) Install the Capstan Brake Assembly and engage the tension spring (19').

No.	Part name
18	Slide plate
18'	Tension spring
19	Capstan brake assembly
19'	Tension spring

Table 2-4-9

20) Push the Take-up Lever with the two holes alinged with the holes on the chassis (see Fig. 2-4-12). In this condition install the Control Plate and the slit washer (20').

21) Install the Worm Clutch Assembly and engage the belt (for the Mode Motor) between the Worm Assembly and the Loading Motor.

No.	Part name
20	Control plate
20'	Slit washer
21	Worm clutch assembly
21'	Belt

Table 2-4-10

22) Push the Idler Cancel Lever while install the Center Gear Unit and the slit washer (22') (see Fig. 2-4-13) with careful attention to the studs of the Idler Cancel Lever and the chassis so that both the studs are correctly set in the upper and the lower grooves of the Center Gear Unit respectively.

23) Install the Control Cam with the hole aligned with hole on the chassis. At that time, the stud in the tip of the Slide Base Assembly must be exactly set in the outer groove of the Control Cam.

No.	Part name
22	Center gear unit
22'	Slit washer
23	Control cam

Table 2-4-11

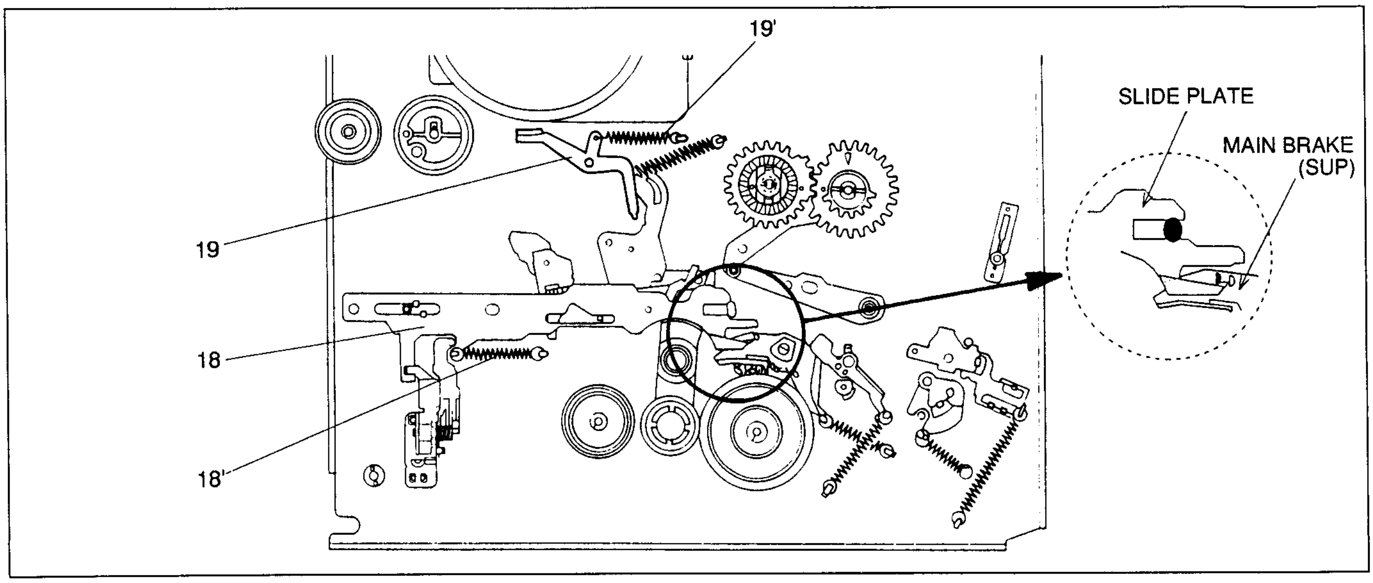

19'
SLIDE PLATE
MAIN BRAKE (SUP)
19
18
18'

Fig. 2-4-11

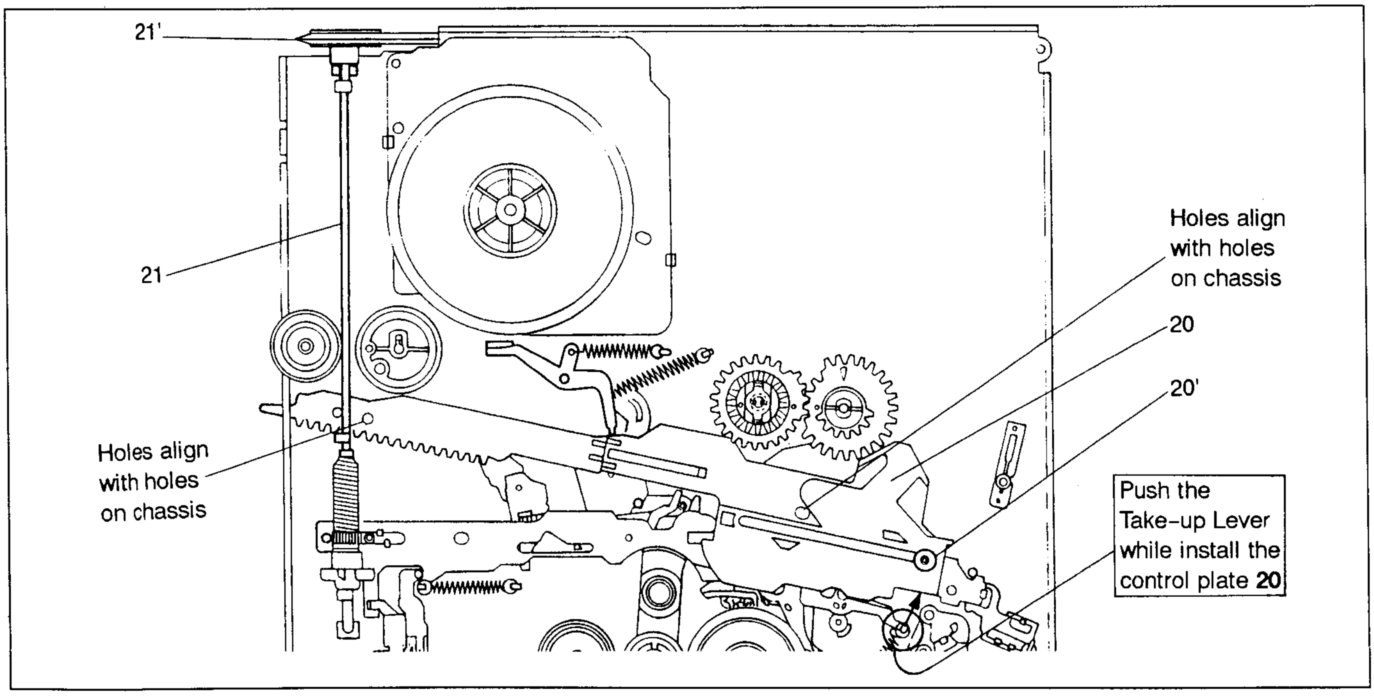

21'
21
Holes align with holes on chassis
20
20'
Holes align with holes on chassis
Push the Take-up Lever while install the control plate **20**

Fig. 2-4-12

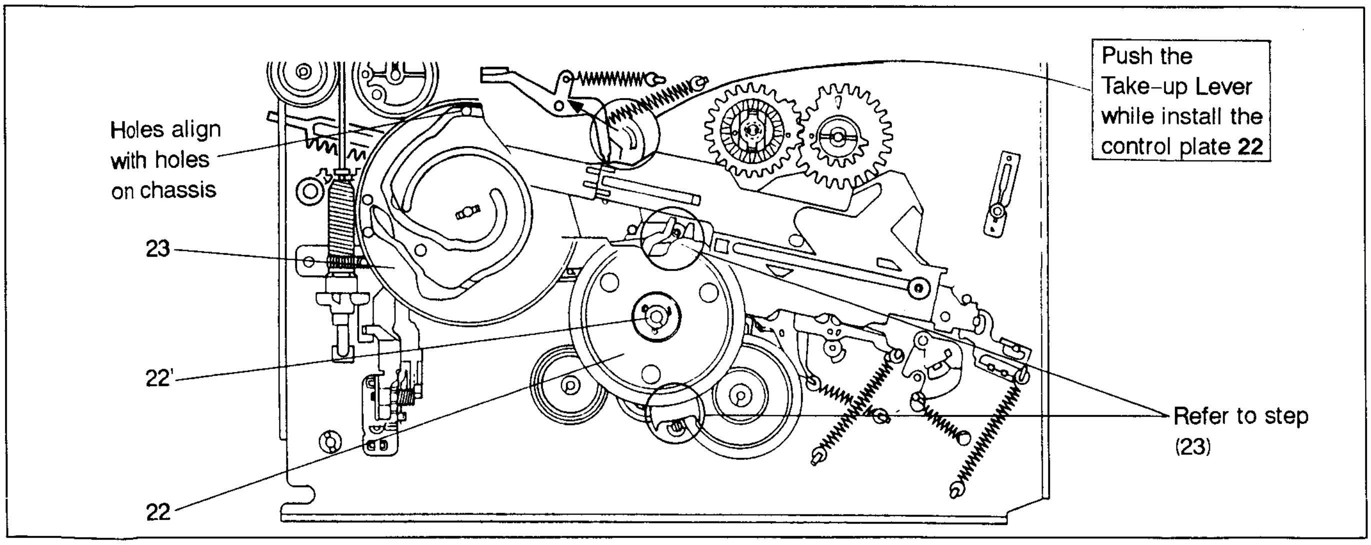

Holes align with holes on chassis
23
22'
22
Push the Take-up Lever while install the control plate **22**
Refer to step (23)

Fig. 2-4-13

24) Install the Arm Gear with the hole aligned with the hole on the Loading Gear (TU side) while secure with the slit washer (24'). At that time, make sure to set the stud of the Arm Gear in the groove of the Control Cam exactly.

No.	Part name
24	Arm gear
24'	Slit washer
24"	Tension spring

Table 2-4-12

25) When installing the DECK TERMINAL board, proceed in the following order; connect CN2, engage 2 hooks, and tighten the board with 4 screws (25').
When the Rotary Encoder is soldered to the DECK TERMINAL board, confirm that the hole of the Rotary Encoder is correctly positioned first, then install the DECK TERMINAL board and the slit washer.

26) Engage the belt (for the Capstan Motor) between the Capstan Motor and the Center Gear Unit.

No.	Part name
25	Deck Terminal board
25'	Screws (x 4)
25"	Connector (CN2)
26	Belt

Table 2-4-13

27) Install the Relay Gear.

28) Install the Drive Arm Assembly, slit washer (28'), and engage the tension spring (28").

29) Install the Rotary Encoder after confirming that the hole is correctly positioned, engage the slit washer (29') and solder the Rotary Encoder.

No.	Part name
27	Relay gear
28	Drive arm assembly
28'	Slit washer
28"	Tension spring
29	Rotary encoder
29'	Slit washer

Table 2-4-14

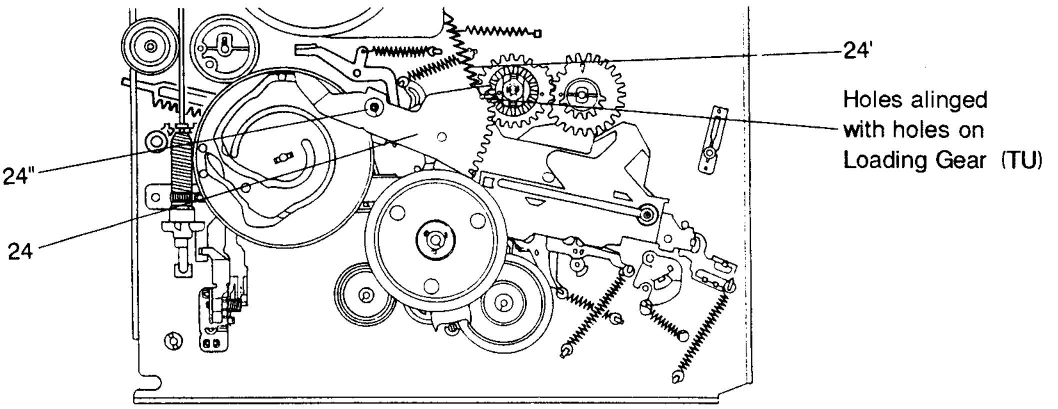

24'
Holes alinged
with holes on
Loading Gear (TU)
24"
24

Fig. 2-4-14

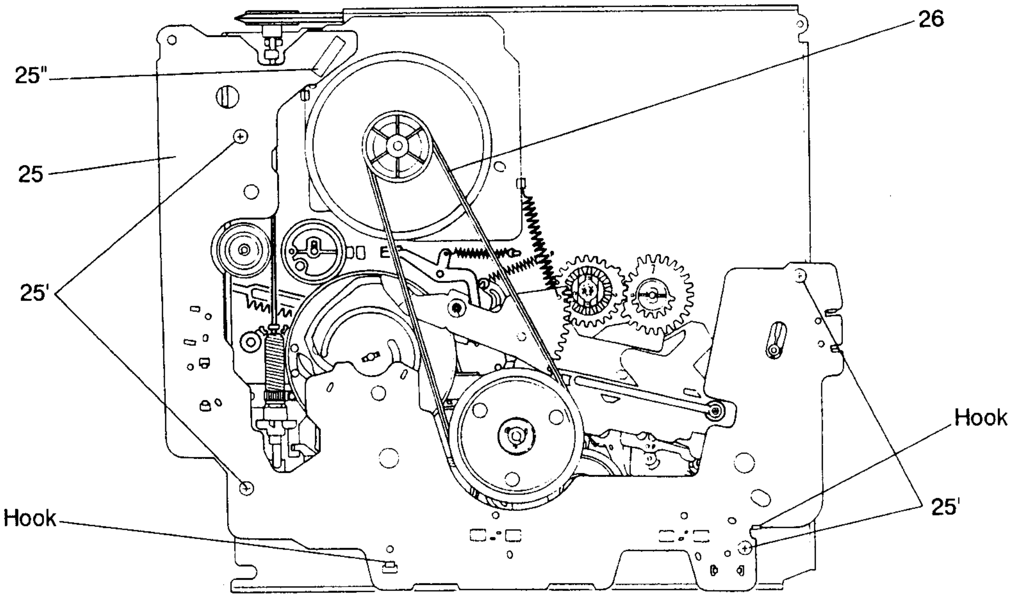

26
25"
25
25'
Hook
Hook
25'

Fig. 2-4-15

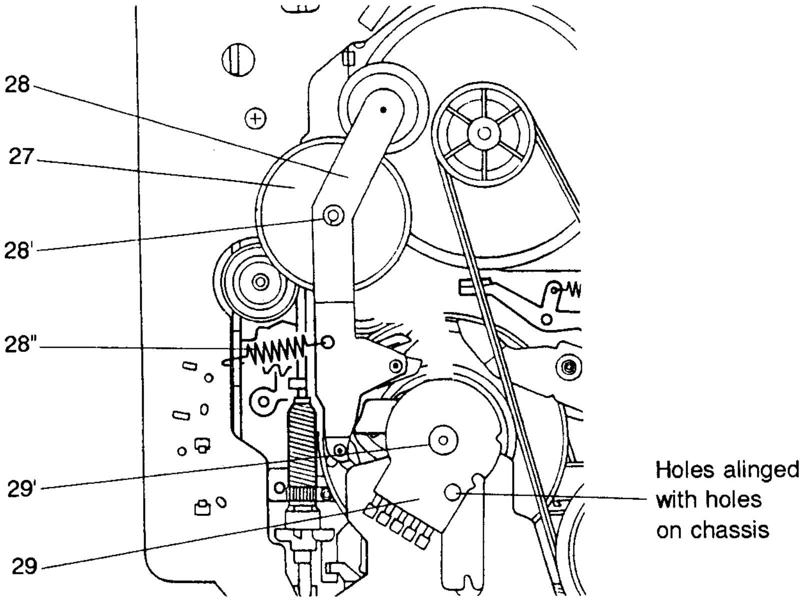

28
27
28'
28"
29'
29
Holes alinged
with holes
on chassis

Fig. 2-4-16

2. Reassembling of mechanism assembly parts in the upper side

1) Install the Pinch Roller Lever and engage the tension spring (1').
2) Install the Pinch Roller Cam as its marking matches with that of the Relay Cam. At that time, the two holes of the Pinch Roller Cam and the chassis should not match completely with each other but double by half as shown in the figure below.
3) Set in the compression spring (3") and install the Pinch Roller Arm Assembly so that the stud of the Pinch Roller Lever is positioned in the elliptical groove of the Pinch Roller Assembly, then engage the slit washer (3').

No.	Part name
1	Pich roller lever
1'	Tension spring
2	Pinch roller cam

Table 2-4-15

No.	Part name
3	Pinch roller arm assembly
3'	Slit washer
3"	Compression spring

Table 2-4-16

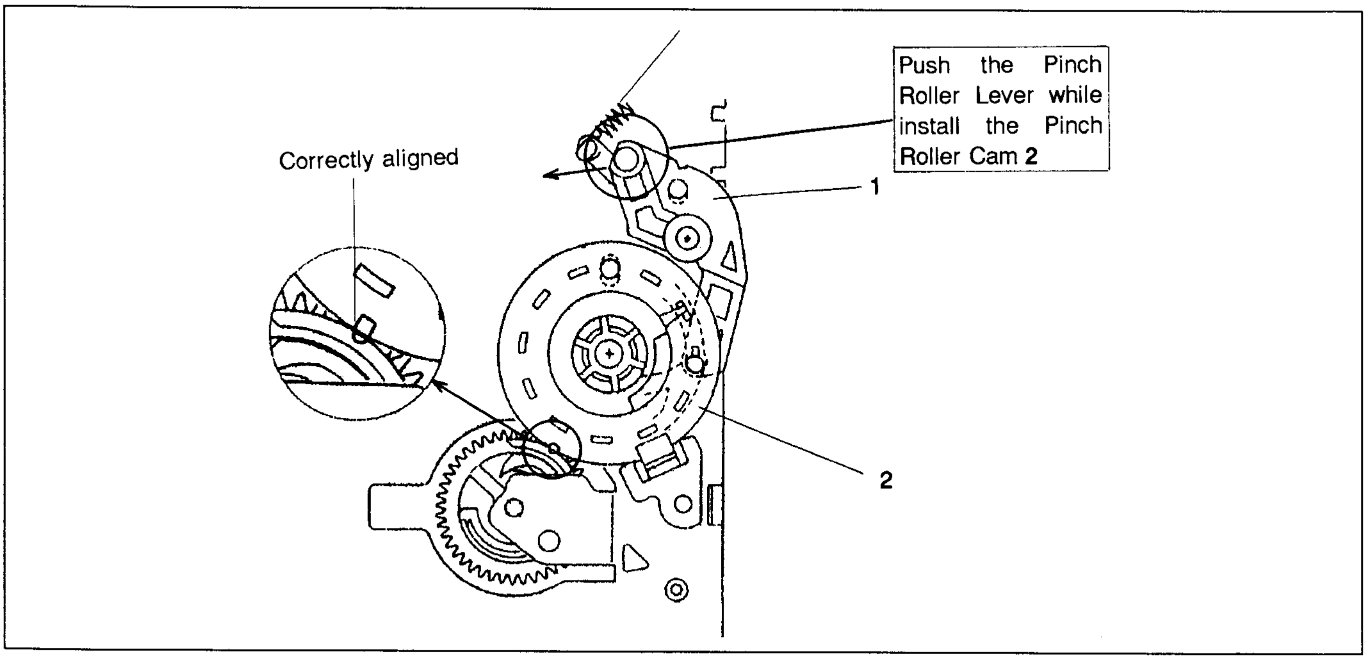

Correctly aligned
Push the Pinch Roller Lever while install the Pinch Roller Cam 2
1
2

Fig. 2-4-17

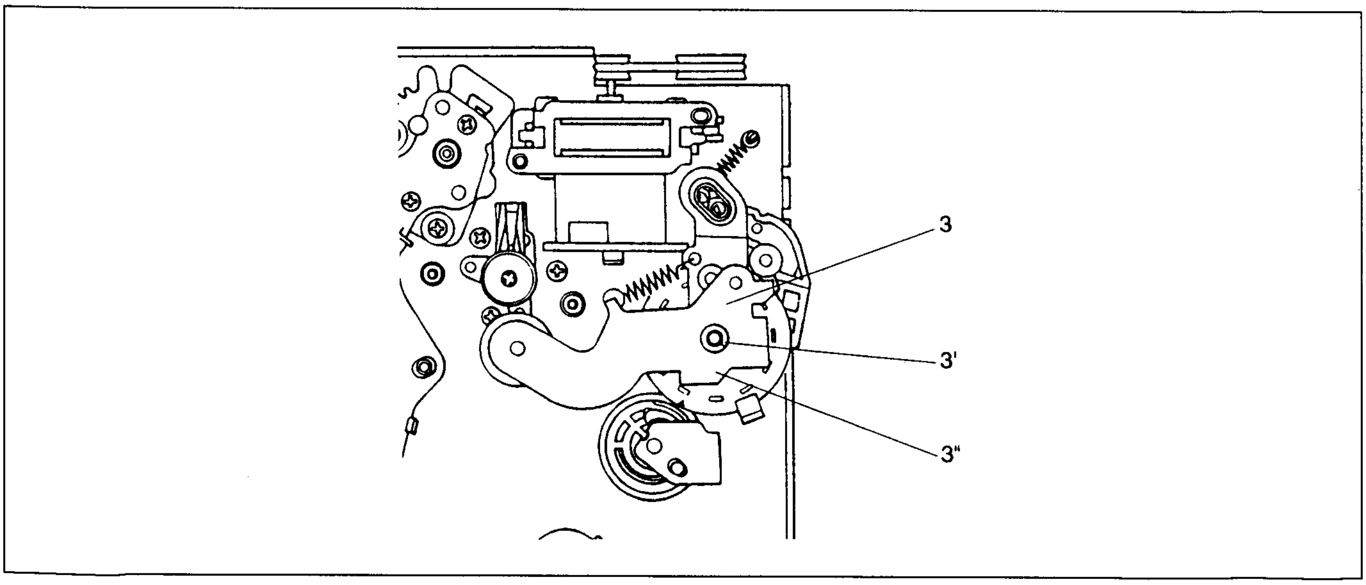
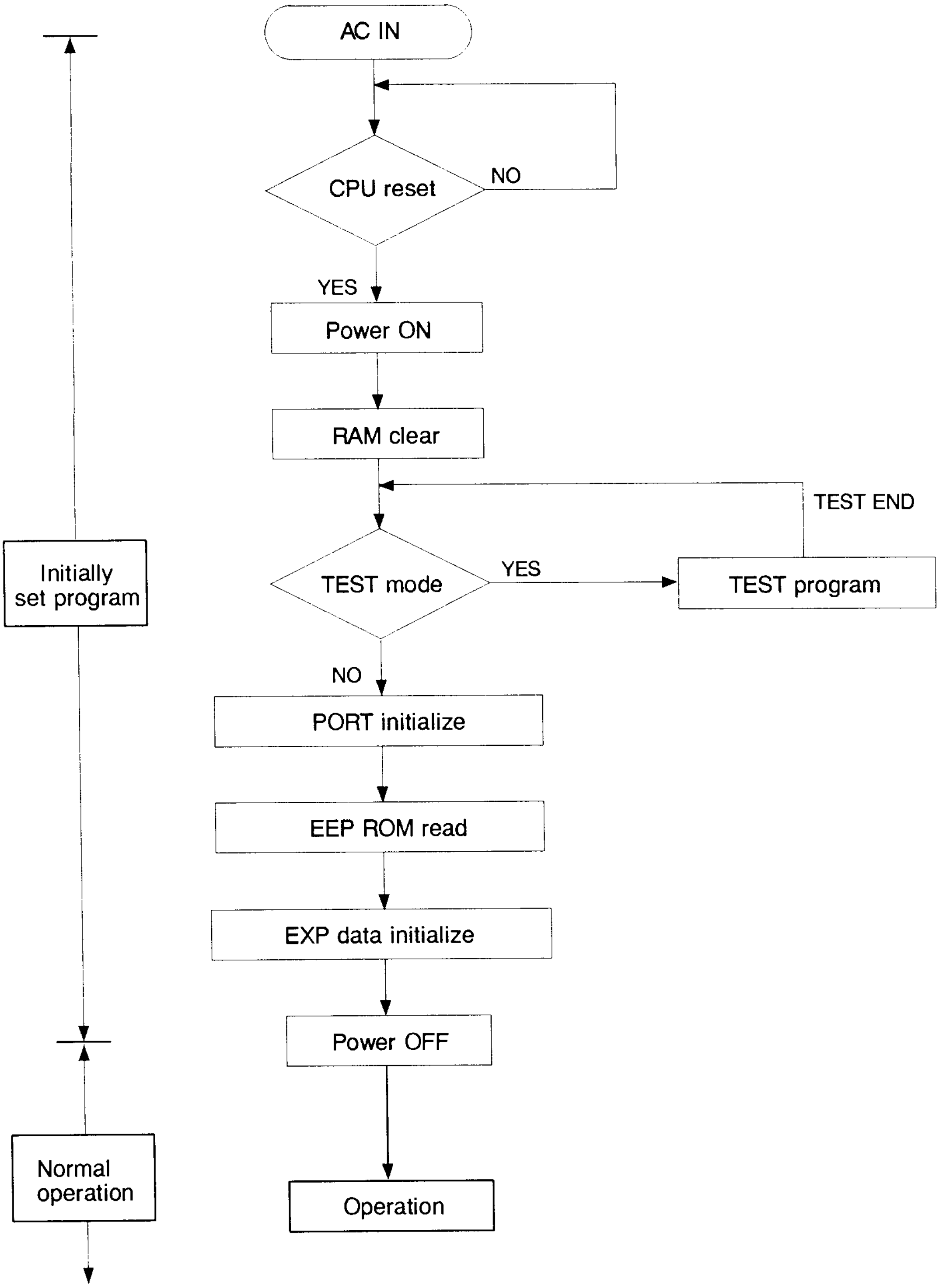


Fig. 2-4-18

2.5 Quick advice

1. Check of faulty mechacon CPU

The following flowchart shows the initially set program that the mechacon CPU executes just after the AC power is supplied to the set.
If this program is not executed normally, the set is inoperable or falls in malfunction. For example, the case of "operation unacceptable" is mostly interpretable as the initial program is not executed normally. Generally, this trouble is not caused by problems of the mechacon CPU itself but results from something faulty in the peripheral parts (elements) of the CPU. This phenomenon rather occurs in this model since it transmits information of operation switches and sensors to the CPU in serial data through the input EXP. IC.
Therefore, this set needs to check the EXP. IC, EEP ROM, etc. besides Vcc, X'tal and so forth of the mechacon CPU.


AC IN
CPU reset
NO
YES
Power ON
RAM clear
TEST END
TEST mode
YES
TEST program
NO
PORT initialize
EEP ROM read
EXP data initialize
Power OFF
Operation
Initially set program
Normal operation

2.6 MAIN PARTS REPLACEMENT AND ADJUSTMENT

2.6.1 Stator assembly

1) Expand the hook in the direction indicated by the arrow and remove the Cleaner Assembly.
2) Take out 1 screw (D), then remove the Earth Plate.
3) Take out 2 screws (A).
4) Raise the Stator Assembly in the direction indicated by the arrow to remove it (also remove the Inertia Roller).
5) Remove the flat cable.
6) To install, first secure the flat cable, then insert 2 screws (A).
7) After installing, be sure to perform switching point adjustment.

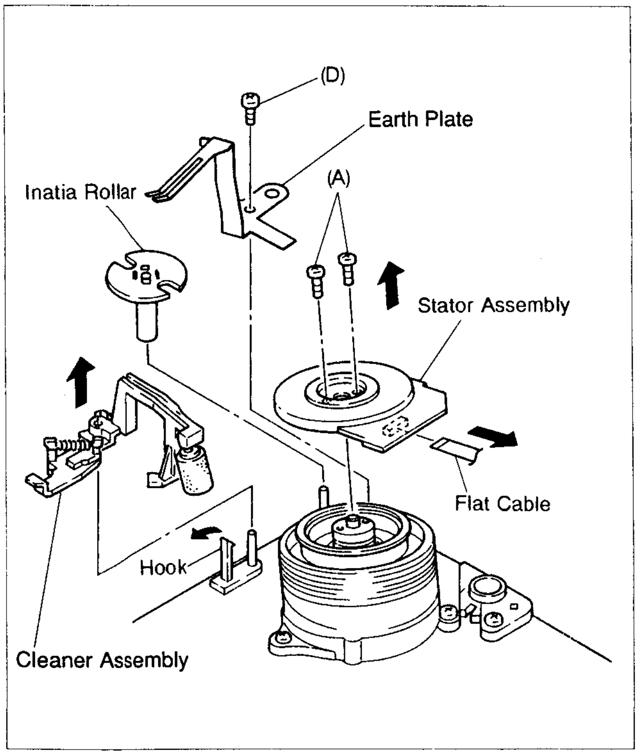

(D)
Earth Plate
Inatia Rollar
(A)
Stator Assembly
Flat Cable
Hook
Cleaner Assembly

Fig. 2-6-1 Stator assembly

2.6.2 Rotor assembly

1) Remove the Cleaner Assembly, Eart Plate and Stator Assembly.
2) Take out 2 screws (B) and remove the Rotor Assembly.

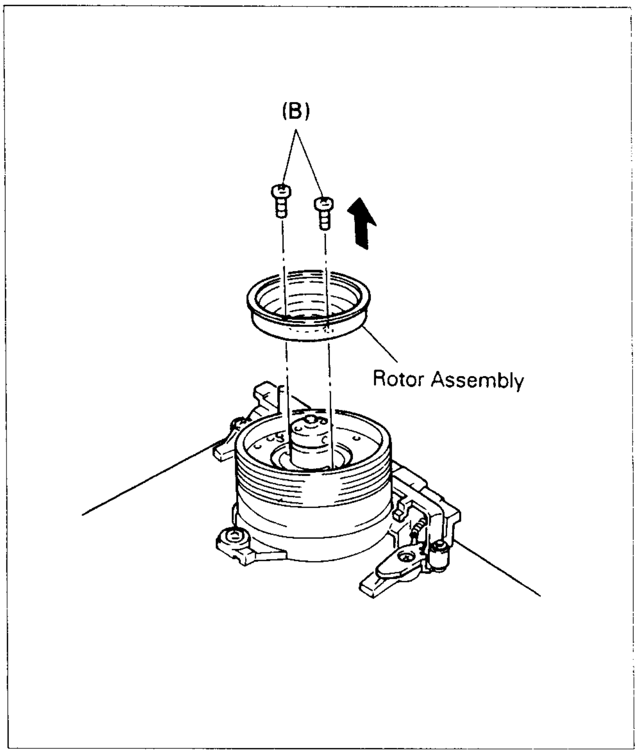

(B)
Rotor Assembly

Fig. 2-6-2 Rotor assembly-1

Note: *A normal picture will not be obtained unless the phase is properly aligned when installing the Rotor Assembly. Also note there are three types of Rotors.*

3) Align the Upper Drum and Rotor Assembly phase as indicated in Fig. 2-6-3.
4) Overlap holes (a) of the Upper Drum with holes (b) of the Rotor Assembly (align holes in 3 locations) and secure with 2 screws (B) (see Fig. 2-6-2).

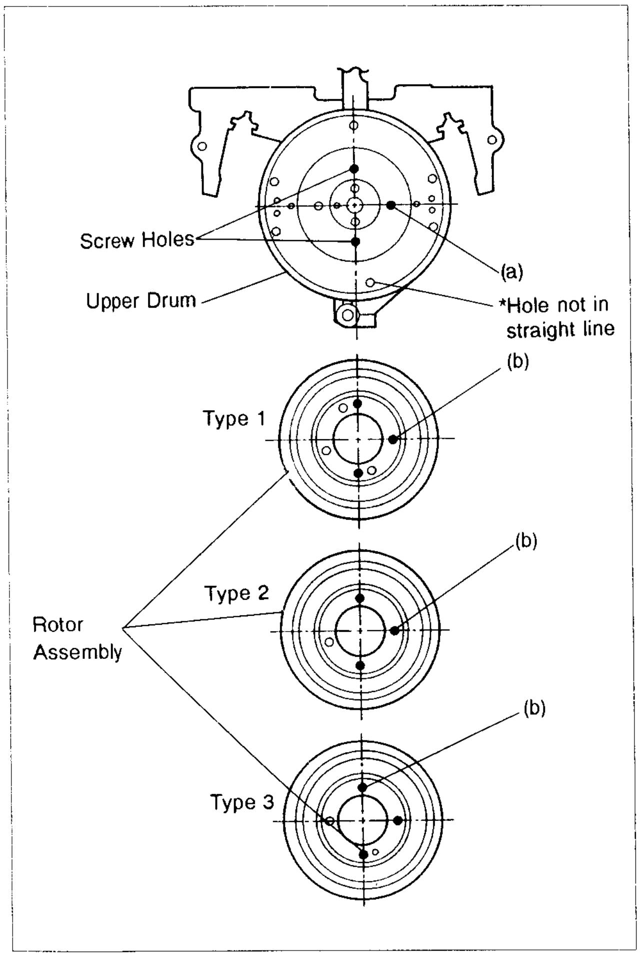

Screw Holes
Upper Drum
(a)
*Hole not in straight line
(b)
Type 1
(b)
Type 2
Rotor Assembly
(b)
Type 3

Fig. 2-6-3 Rotor assembly-2

2.6.3 Drum sub assembly

1) Disengage the PRE/REC AMP board connector and flat cable.
2) Take out 3 screws (C) and remove the Drum Subassembly.

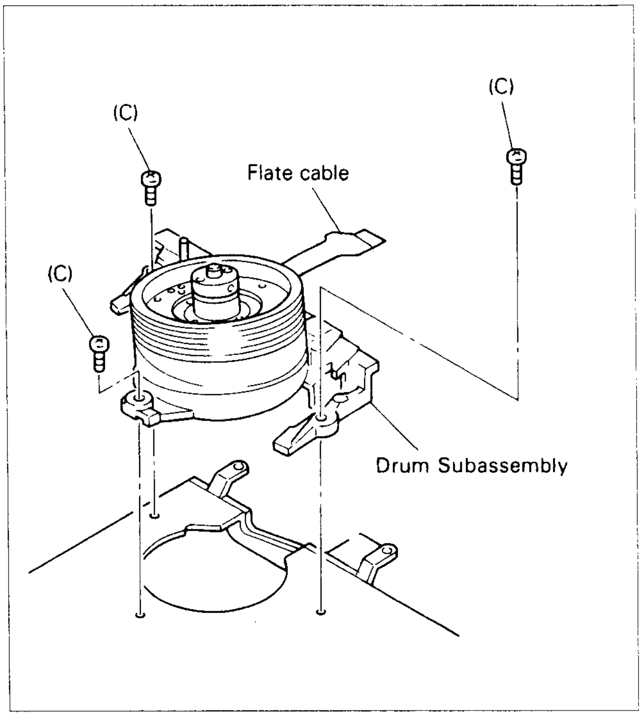

(C)
(C)
Flate cable
(C)
Drum Subassembly

Fig. 2-6-4 Drum aub assembly

2.6.4 Upper Drum assembly

1. Removal

1) Remove the Stator and Rotor Assemblies.
2) Use a 1.5 mm hexagonal wrench to loosen the Collar Assembly screw and remove the Collar Assembly.
3) Remove the Upper Drum Assembly and use tweezers to remove the Washer.

Note: *As grease is applied to the Brush, use care to avoid contamination by dirt or other foreign matter. If the Brush is replaced, use care regarding top and bottom direction and be sure to apply the specified grease (PTU94014A) to the contact sections (2 locations).*

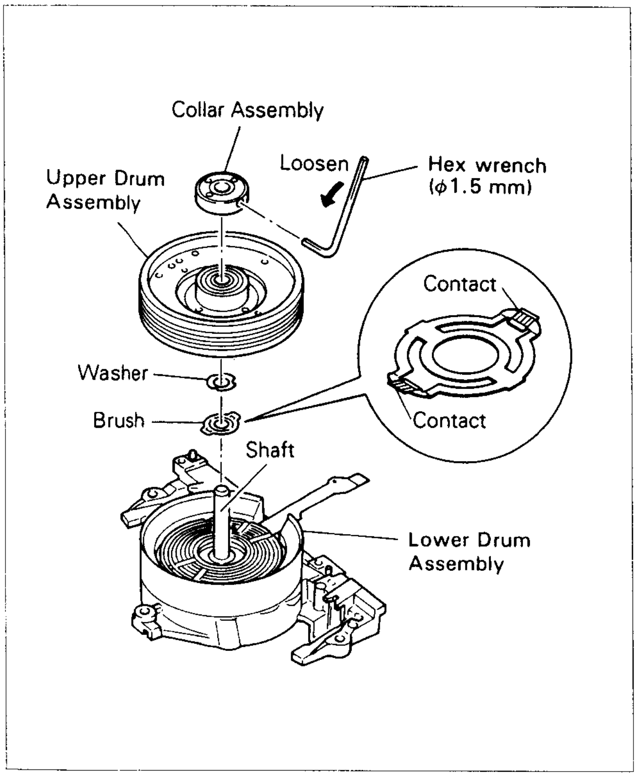

Collar Assembly
Upper Drum Assembly
Loosen
Hex wrench (φ1.5 mm)
Contact
Washer
Brush
Contact
Shaft
Lower Drum Assembly

Fig. 2-6-5 Upper drum assembly-1

2. Installation

1) Use an air brush to clean the Lower Drum Assembly and the coil section of the new Upper Drum Assembly.
2) Set a new Washer and Upper Drum Assembly on the Drum shaft (see Fig. 2-6-5).

Note: *Be sure to use the new Washer supplied with the replacement Upper Drum Assembly.*

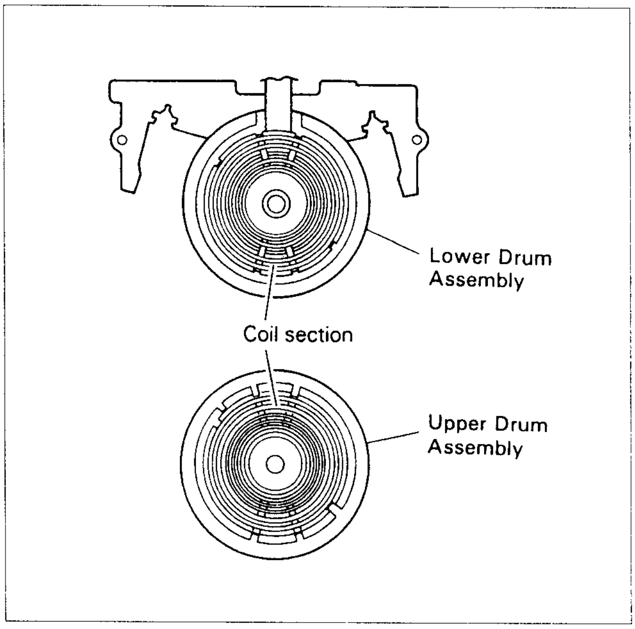

Lower Drum Assembly
Coil section
Upper Drum Assembly

Fig. 2-6-6 Upper drum assebly-2

3) Note the top and bottom of the Collar Assembly and determine the position as indicated in Fig. 2-6-7.

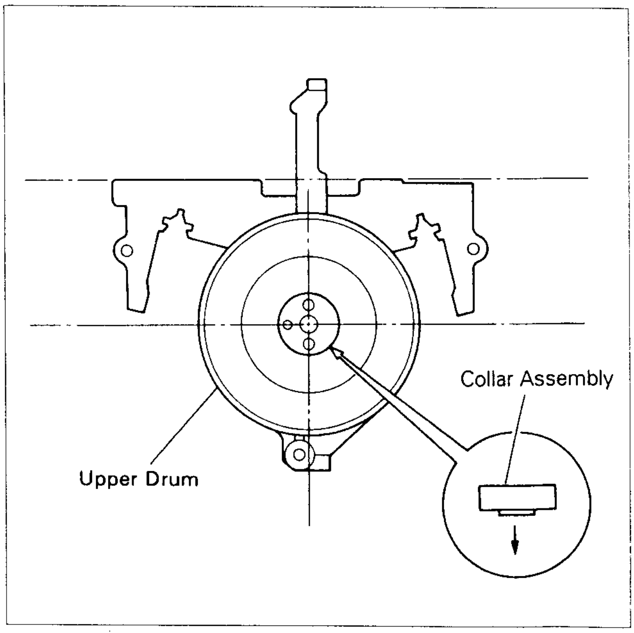

Collar Assembly
Upper Drum

Fig. 2-6-7 Collar assembly-1

4) While pressing the Collar Assembly evenly from above with the fingertips, secure the hexagonal screw.

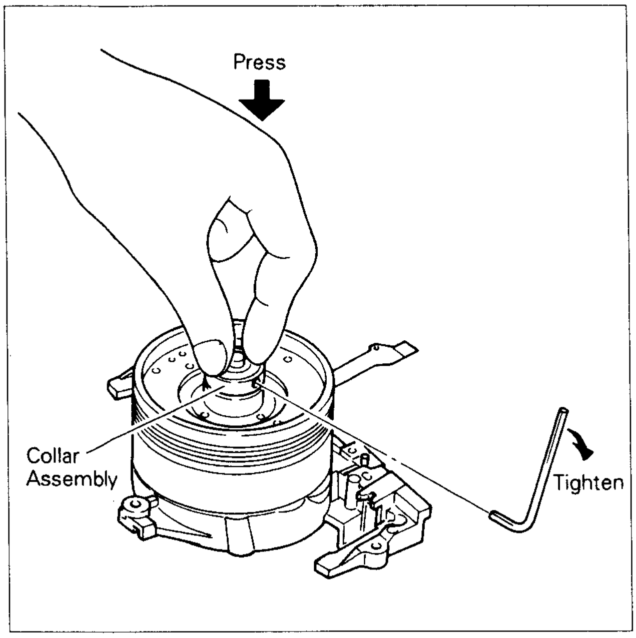

Press
Collar Assembly
Tighten

Fig. 2-6-8 Collar assembly-2

5) After installing, gently turn the Upper Drum by hand and confirm normal rotation.
6) Install the Rotor and Stator Assemblies.
7) Clean the Upper and Lower Drum Assemblies and perform the following adjustments;
   - Switching Point Adjustment
   - Interchangeability Adjustment (be sure to check LP mode)
   - Recording colour level Adjustment

2.6.5 A/C head

1. Removal

1) Take out 2 screws ① and remove the A/C head arm assembly.

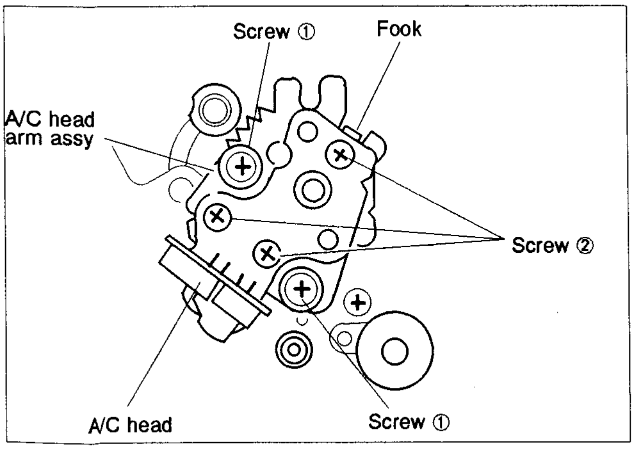

Screw ①
Fook
A/C head arm assy
Screw ②
A/C head
Screw ①

Fig. 2-6-9 A/C head replacement-1

2) When replace only A/C head. Remove 3 screws ②, use care not to misplace the 3 springs.

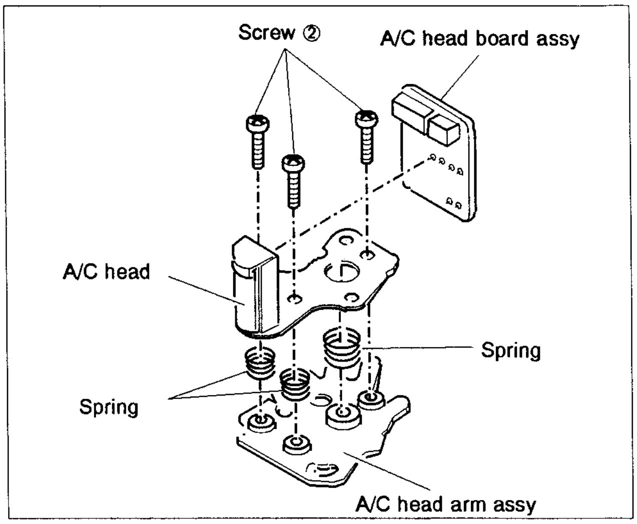

Screw ②
A/C head board assy
A/C head
Spring
Spring
A/C head arm assy

Fig. 2-6-10 A/C head replacement-2

2. Installation

1) Temporarily set the A/C head height as indicated in Fig. 2-6-11.

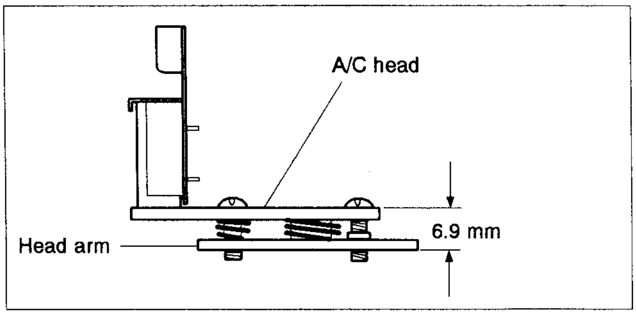

A/C head
Head arm
6.9 mm

Fig. 2-6-11 A/C head height

Notes:
- *It is very important to correctly adjust the control pulse and audio signal in addition to the mechanical tape path.*
- *Perform interchangeability adjustments after electrical adjustments.*

2.7 TAPE INTERCHANGEABILITY ADJUSTMENT

Note: *This adjustment is extremely important. However, it is normally not required during routine service. Perform only after replacing major components (A/C head, drum assembly, etc.).*

2.7.1 Tilt adjustment of A/C head

1) Use blank tape and set for playback.
2) Turn 1 screw ① clockwise to where the tape curls just slightly at the take-up guide pole bottom flange, as shown in Fig. 2-7-1.
3) Then slowly turn screw ① counter-clockwise to where the curling ceases.

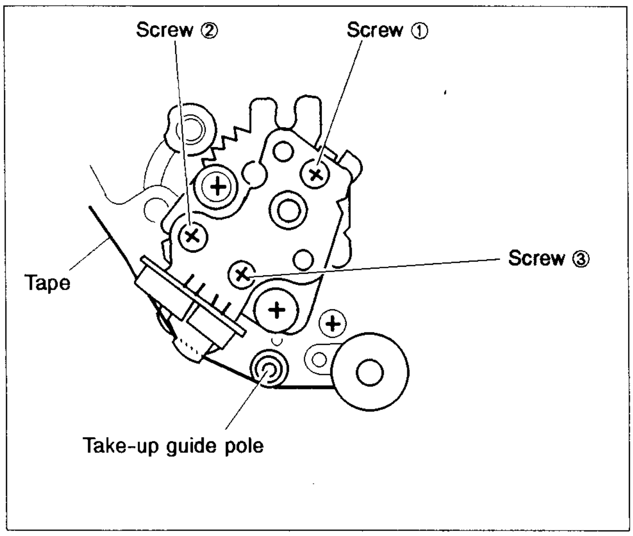


Fig. 2-7-1 A/C head tilt adjustment

2.7.2 Aximuth adjustment of A/C head

1) Connect the oscilloscope to the audio output jack on the rear of the deck.
2) Playback the stairstep portion (6 kHz, Mono) of the alignment tape.
3) Adjust 1 screw ② on the A/C head arm assembly in Fig. 2-7-1 so that the audio output is both maximum and with minimum fluctuation.

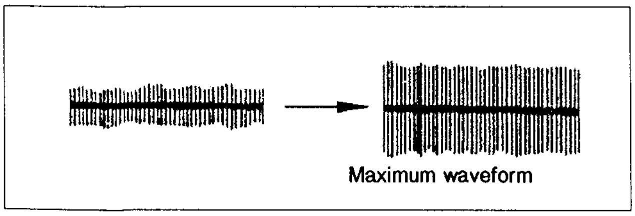


Fig. 2-7-2 A/C head azimuth adjustment

2.7.3 Height adjustment of A/C head

1) Playback the blank tape and observe the control head area.
2) Turn screws ①, ② and ③ by small and equal increments (about 45° at a time) to adjust the A/C head height for equal width can be seen, by both core erea as shown in Fig. 2-7-3 (upper core of the audio erase head and bottom core of the control head).
3) Confirm that the azimuth adjustment (2.7.2), if necessary adjustment it.

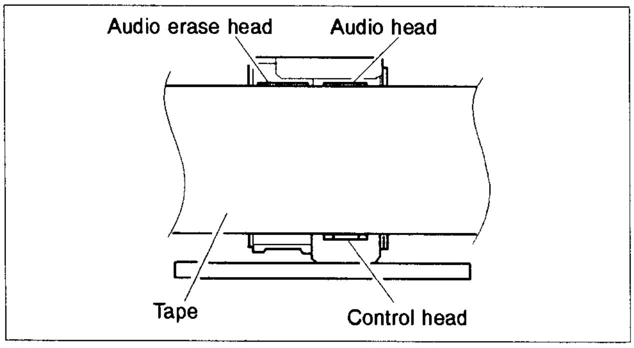


Fig. 2-7-3 A/C head height adjustment

2.7.4 Phase (X-value) adjustment of A/C head

1) Playback the stairstep portion of the alignment tape [MH-2].
2) Connect the oscilloscope to TP353 (PB FM) on the MAIN board. Use TP511 (DRUM FF) on the PRE/REC board as a trigger. Confirm that the FM waveform appears, as in Fig. 2-7-5.
3) Set the neutral manual tracking position, by simultaneously press of the (+) and (-) tracking buttons.
4) If adjustment is required, slightly loosen screws ④ and ⑤. Set A/C head positioning tool on the A/C head adjusting boss as shown in Fig. 2-7-4.
5) Turn the tool first to position the A/C head fully toward the capstan. Then gradually return it toward the durm and stop at the position of maximum FM waveform output level as shown in Fig. 2-7-5.
6) Tighten screw ⑤. Remove the tool and tighten screw ④.
7) Eject the tape and then re-insert alignment tape [MH-2L]. Playback the stairestep of the alignment tape. Set the neutral manual tracking position.
8) Confirm maximum playback FM waveform outut level sa shown in Fig. 2-7-5.
9) If not maximum, slightly loosen the screws ④ and ⑤ . Use the tool and adjust the head position for the nearest maximum point. Then tighten screws ④ and ⑤.

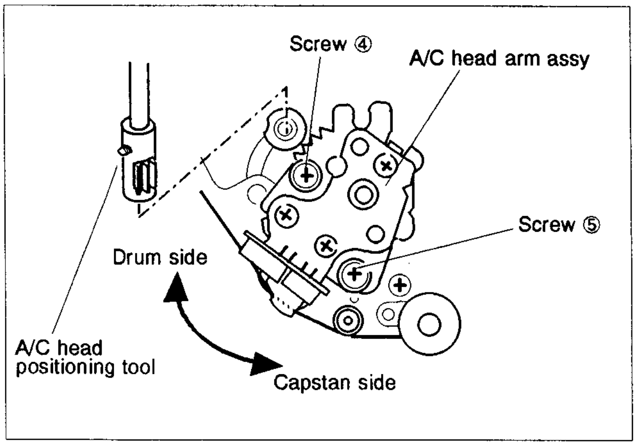


Fig. 2-7-4 A/C head phase adjustment-1

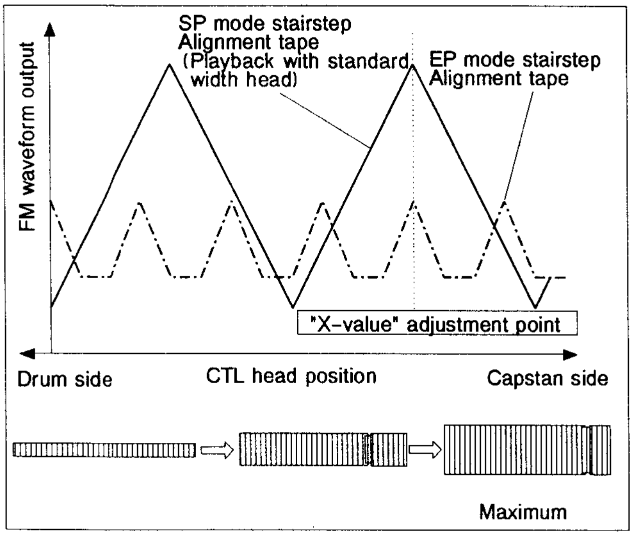


Fig. 2-7-5 A/C head phase adjustment-2

2.7.5 LP mode auto tracking

1) Playback the stairstep of the alignment tape [MH-2L].
2) Confirm that the A/V digital tracking LED changes coming on from flickering.
3) Press the "D" button of the preseting unit [PTU94008] to turn off the A/V digital tracking LED.
4) Press the "D" button again to change the mode to the LP interchangeability adjustment mode and confirm that the A/V digital tracking LED changes to coming out from flickering.

Note: *When the MH-2L alignment tape is automatically ejected from the cassette housing, repeat the above adjustment (phase adjustment of A/C head, sec. 2.7.4).*

2.7.6 Tension pole position

1) Turn the eccentric adjust pin to align the notch of the pin with the mark as shown in Fig. 2-7-6.
2) Set the cassette housing assembly. Use the back tension cassette gauge and set for the playback mode.
3) Confirm reading of 35 to 48 g•cm.

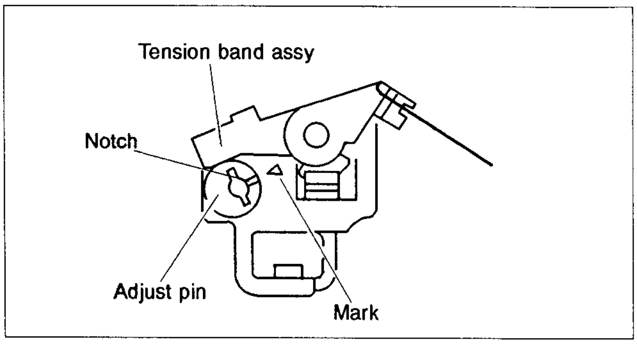


Fig. 2-7-6 Tension pole position

2.7.7 Clutch assembly adjustment

1) Remove cassette housing and se for playback mode (Refer to sec. 2.1.2).
2) Set torque gauge on the take-up reel disk. Gradually relax your grip on the gauge and read the needle indication at the point the gauge begins to rotate with the disk. Confirm indication of 60 to 100 g•cm.

2.7.8 SUP/TU pole base adjustment

This is the most important adjustment. If incorrect, proper tracking will not be obtained in recording and playback.
Other problems that may occur are noise in parts of the picture, poor colour reproduction and picture instability.

1) Playback the stairstep portion of the alignment tape [MH-2].
2) Connect the oscilloscope to TP353 (PB FM) on the MAIN board. Use TP511 (DRUM FF) on the PRE/REC board as a trigger. Confirm that the RF envelope appears, as in Fig. 2-5-9.
3) Operate the tracking adjustment (press the tracking buttons during playback) and set for maximum playback RF envelope waveform.
4) If adjustment is required, first slightly loosen the set screw located at the bottom of the guide rollers. Using the guide roller adjustment tool, adjust the supply and take-up guide rollers (refer to Fig. 2-7-8) to obtain the correct waveform. Refer to Fig. 2-7-9.

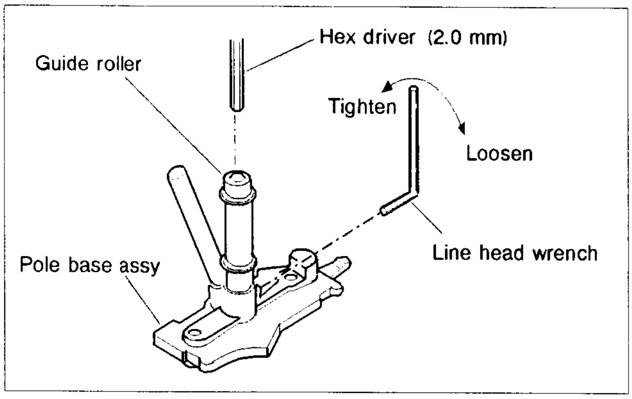

Hex driver (2.0 mm)
Guide roller
Tighten
Loosen
Line head wrench
Pole base assy

Fig. 2-7-8 SUP/TU pole base assembly

5) By pushing the tracking buttons several times, vary the FM waveform output from maximum to minimum (and vice versa) gradually, and confirm that the variation proceeds in a flat shape, as in Fig. 2-7-10.
6) If the FM waveform varies and is not mostly flat, tweak the height of guide roller(s) until the RF waveform is as flat as possible.
7) Eject a tape and then playback tape again, since the height of guide rollers may move during adjustment. Confirm, when pushing the tracking (+) and (-) buttons, FM waveform variation is always flat.

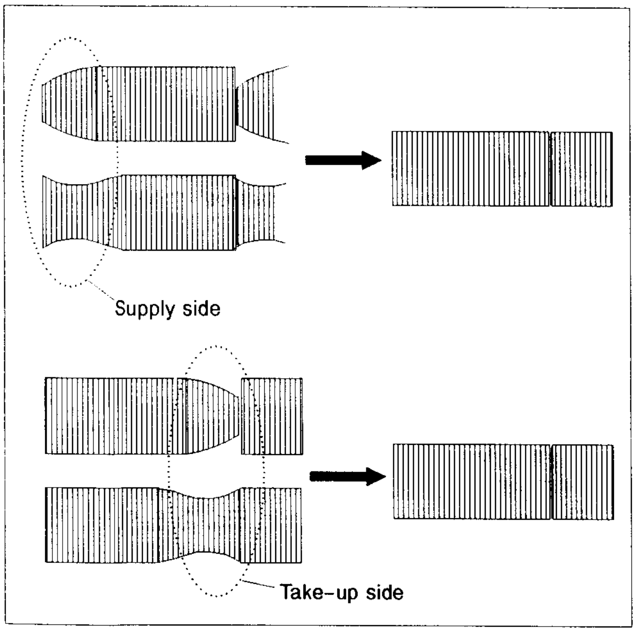

Supply side
Take-up side

Fig. 2-7-9 FM waveform -1

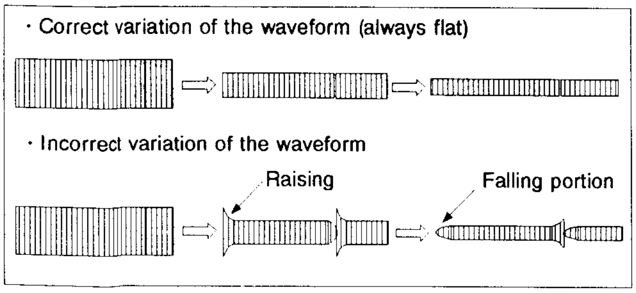

· Correct variation of the waveform (always flat)
· Incorrect variation of the waveform
Raising
Falling portion

Fig. 2-7-10 FM waveform -2

2.7.9 Tape transport system confirmation

1) Use a 140-minute or more long tape and check at the tepe beginning and ending portion according to the following steps.
2) Confirm absence of curling, wrinkling, slippage, etc at the (a), (b), (c) and (d) portions, as shown in Fig. 2-7-11.
3) If curling or winkling are observed during the above checks, perform the steps 2.7.1 to 2.7.8.

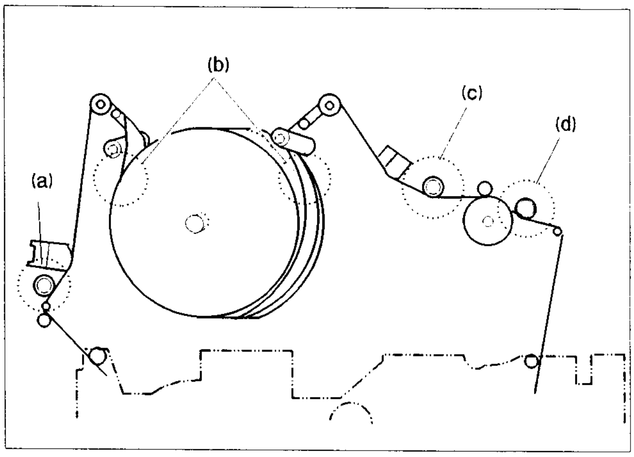


Fig. 2-7-11 Tape transport system

SECTION 3
ELECTRICAL ADJUSTMENT

3.1 DECK SECTION ADJUSTMENT

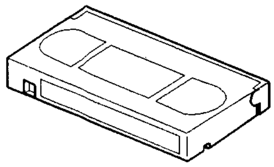
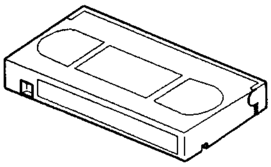
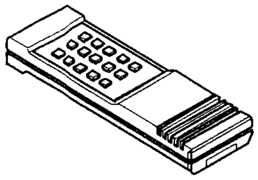
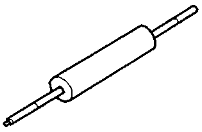
3.1.1 PRECAUTION

Electrical adjustments are required after replacing circuit components and certain mechanical parts.
It is important to perform these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipments is available.

1. Required test equipment

1. Colour television or monitor
2. Osciloscope: wide-band, dual-trace, triggered delayed sweep
3. Frequency counter
4. Digital voltmeter
5. Signal generator: RF/IF sweep/maker
6. Signal generator: PAL/SECAM colour bar, stair-step
7. Recording tape

2. Required adjustment tools

Alignment tape (SP) MH-2	Alignment tape (LP) MH-2L
	
Presetting unit PTU94008	Adjustment driver YTU93004-2
	
*SMC replacement tools YTU94038C	

***Note**: *It is convenient for replacing chip parts.*

3. Colour bar signal and pattern

- SECAM colour bar signal waveform

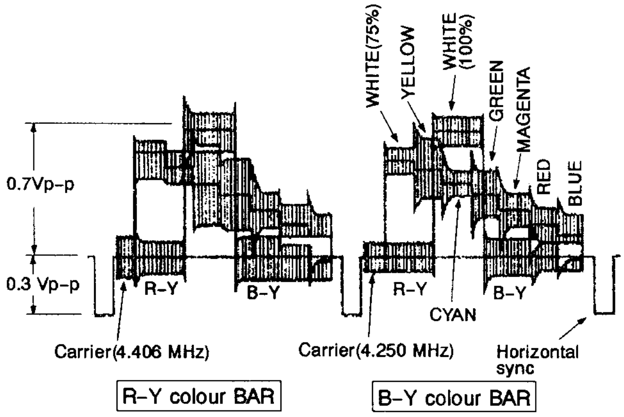

WHITE(75%)
YELLOW
WHITE (100%)
GREEN
MAGENTA
RED
BLUE
CYAN
0.7Vp-p
0.3 Vp-p
R-Y
B-Y
R-Y
B-Y
Carrier(4.406 MHz)
Carrier(4.250 MHz)
Horizontal sync
R-Y colour BAR
B-Y colour BAR

Fig. 3-1-1 SECAM colour bar signal waveform

- SECAM colour bar pattern

White	Yellow	Cyan	Green	Magenta	Red	Blue
R-Y	White 100%		B-Y		Black	

Fig. 3-1-2 SECAM colour bar pattern

- PAL colour bar signal waveform

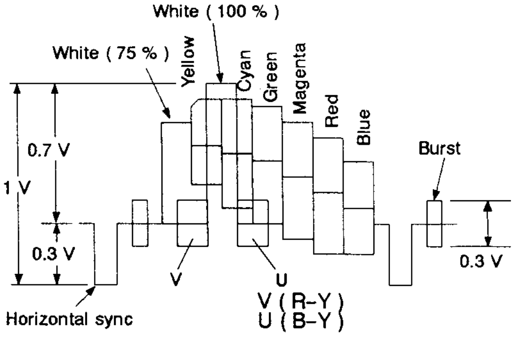

White (100 %)
White (75 %)
Yellow
Cyan
Green
Magenta
Red
Blue
Burst
0.7 V
1 V
0.3 V
0.3 V
V
U
V (R-Y)
U (B-Y)
Horizontal sync

Fig. 3-1-3 PAL Colour bar signal waveform

- PAL colour bar pattern

(75 %)

White	Yellow	Cyan	Green	Magenta	Red	Blue
V	U	White 100%			Black	

Fig. 3-1-4 PAL colour bar pattern

3.1.2 SERVO CIRCUIT

Note: *Unless otherwise specified, all measurement points and adjustment parts are located on the MAIN BOARD.*

1. PB switching point

Signal	•Alignment tape (MH-2) •Stairstep
Mode	•PB •Digital tracking OFF
Equipment	•Oscilloscope
Measurement point	•TP210 (VIDEO OUT)
Trigger slope (-)	•TP511 (DRUM FF) [PRE/REC AMP BOARD]
Adjustment tool	•Presetting unit [PTU94008]
Specification	•6.5 ± 0.5 H

Note: *Use only buttons "E" and "F". Deplessing other buttons during adjustment may cause adjustment errors.*

1) Connect an oscilloscope to TP210 and external trigger from TP511 (negative slope).
2) Playback the stairstep signal of the alignment tape.
3) Set the tracking control to the center position by simultaneously pressing the (+) and (-) buttons.
4) Adjust by pressing "E" (+) or "F" (-) buttons of presetting unit for position the trigger point 6.5 ± 0.5 H from V.sync.

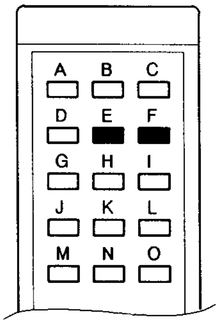


Fig. 3-1-5 Presetting unit

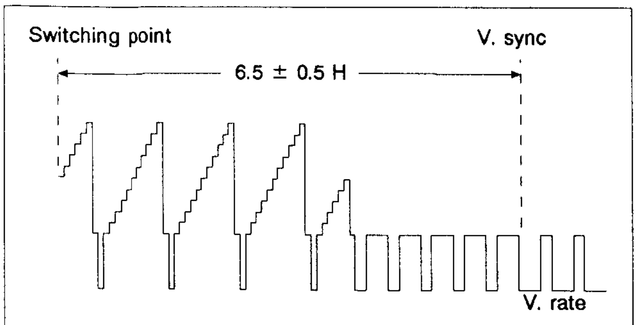


Fig. 3-1-6 PB switching point

2. Slow tracking preset

Signal	•Colour bar
Mode	•SP/LP •REC → PB (SLOW) •Digital tracking OFF
Equipment	•TV-Monitor
Adjustment tool	•Presetting unit [PTU94008]
Specification	•Mimimum noise

Note: *Set VCR to the mode A by remote controller.*

1) Record a colour bar signal in the SP mode.
2) Playback recorded signal on the FWD slow mode.
3) Set the tracking control to the centre position by simultaneously pressing the (+) and (-) buttons.
4) Observe the display on a TV monitor and adjust for optimum noise condition (best tracking) by depressing "C" (+) or "B" (-) buttons of presetting unit as required.
5) Depress the STOP button.
6) Confirm that the bar noise is not visible on the monitor in the slow mode.
7) Repeat steps 2) to 6) in REV slow mode.
8) Repeat steps 1) to 7) in LP mode.

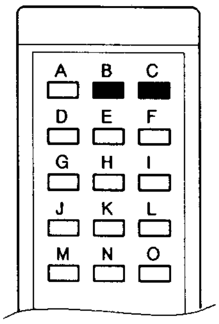


Fig. 3-1-7 Presetting unit

3.1.3 VIDEO CIRCUIT

Note: *Unless otherwise specified, all measurement points and adjustment parts are located on the VIDEO UNIT BOARD.*

Important:

Item 1. thru 6..

1) Ordinarily performing these adjustments is not required. Adjustments should be performed only if IC2 on the VIDEO UNIT BOARD has been replaced.
2) To adjust, replace fixed resistor with variable chip resistor, then adjust as required.

1. EE Y level

Signal	•Colour bar
Mode	•EE
Equipment	•Oscilloscope
Measurement point	•CN3 pin 10 (VIDEO OUT)
Adjustment part	•R42 (EE Y LEVEL)
Specification	•2.00 ± 0.06 Vp-p (Unterminated)

1) Connect an oscilloscope to CN3 pin 10.
2) Confirm that Y level is 2.00 ± 0.06 Vp-p. Unterminated.
3) If necessary, replace R42 with the variable chip resistor NVP1301-153N and adjust it for 2.00 ± 0.06 Vp-p, as in Fig. 3-1-8.

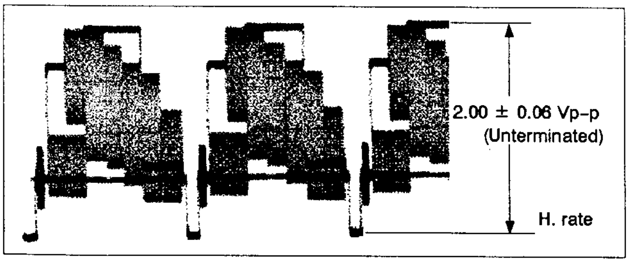


Fig. 3-1-8 EE Y level

2. White clip

Signal	•Colour bar
Mode	•EE
Equipment	•Oscilloscope
Measurement point	•IC2 pin 22
Adjustment part	•R45 (W/D CLIP)
Specification	•WHITE CLIP : 190 ± 4 % •DARK CLIP : 145 ± 8 %

1) Connect an oscilloscope to IC2 pin 22.
2) Confirm that white clip is 190 ± 4 % and dark clip is 145 ± 8 %.
3) If necessary, replace R45 with the variable chip resistor NVP1301-103N and adjust it 190 ± 4 % white clip and 145 ± 8 % dark clip, as in Fig. 3-1-9.

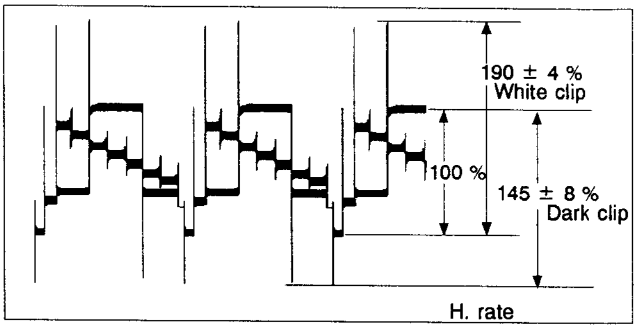


Fig. 3-1-9 White clip

3. Carrier & deviation

· Carrier

Signal	•No signal-VIDEO INPUT (Shorted RCA Phono Plug)
Mode	•EE
Equipment	•Frequency counter
Measurement point	•CN2 pin 5
Adjustment part	•R28 (CARRIER)
Specification	•3.80 MHz ± 40 kHz

1) Connect a frequency counter to CN2 pin 5.
2) Confirm that frequency is 3.80 MHz ± 40 kHz.
3) If necessary, replace R28 with the variable chip resistor NVP1301-223N and adjust it for 3.80 MHz ± 40 kHz.

· Deviation

Signal	•Colour bar
Mode	•REC then PB
Equipment	•Oscilloscope
Measurement point	•CN3 pin 10 (VIDEO OUT)
Adjustment part	•R29 (DEVIATION)
Specification	•2.00 ± 0.06 Vp-p (Unterminated)

4) Record and playback a colour bar signal.
5) Confirm that Y level is 2.00 ± 0.06 Vp-p unterminated.
6) If necessary, replace R29 with the variable chip resistor NVP1301-103N and adjust it for 2.00 ± 0.06 Vp-p, as in Fig. 3-1-10.

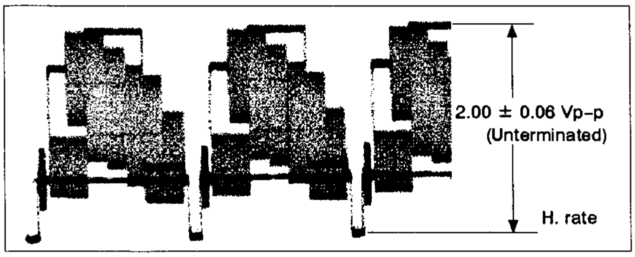


Fig. 3-1-10 Carrier & deviation

4. YNR level

Signal	•Colour bar
Mode	•EE
Equipment	•Oscilloscope
Measurement point	•IC2 pin 9
Adjustment part	•R18 (N.C. BALANCE)
Specification	•Mimimum DC step difference

1) Connect an oscilloscope to IC2 pin 9.
2) Confirm that DC step difference is minimum.
3) If necessary, replace R18 with the variable resistor NVP1301-222N and adjust it for minimum DC step difference, as in Fig. 3-1-11.

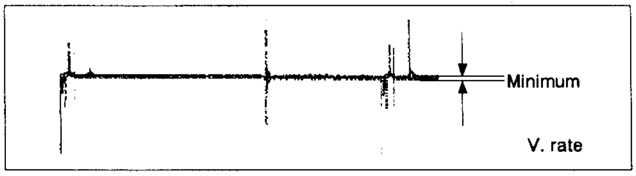


Fig. 3-1-11 YNR level

5. PB Y level

Signal	•Colour bar
Mode	•SP •REC then PB
Equipment	•Oscilloscope
Measurement point	•CN3 pin 10 (VIDEO OUT)
Adjustment part	•R25 (PB Y LEVEL)
Specification	•2.00 ± 0.06 Vp-p (Unterminated)

Note: *Confirm that procedure 3.1.4-2. is correct before performing this adjustment procedure.*

1) Connect an oscilloscope to CN3 pin 10.
2) Record and playbck a colour bar signal.
3) Confirm that Y level is 2.00 ± 0.06 Vp-p unterminated.
4) If necessary, replace R25 with the variable resistor NVP1301-103N and adjust it for 2.00 ± 0.06 Vp-p, as in Fig. 3-1-12.

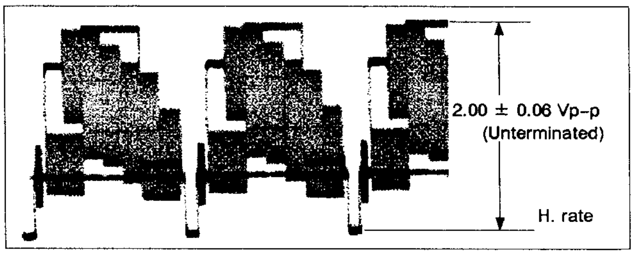


Fig. 3-1-12 PB Y level

6. REC colour level

Signal	•Colour bar
Mode	•SP •REC
Equipment	•Oscilloscope
Measurement point	•CN2 pin 11 (REC COLOUR)
Adjustment part	•R52 (REC COLOUR LEVEL)
Specification	•200 ± 10 mVp-p

1) Connect an oscilloscope to CN2 pin 11.
2) Record the colour bar signal in SP mode.
3) Confirm that colour level is 200 ± 10 mV p-p, as in Fig. 3-1-13.
4) If necessary, replace R52 with the variable resistor NVP1301-332N and adjust it for 200 ± 10 mVp-p.

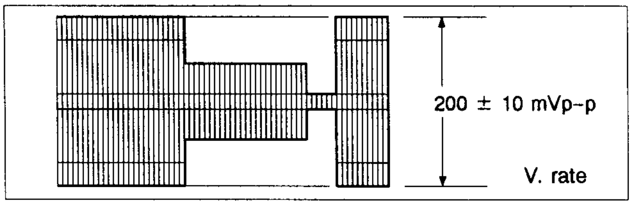


Fig. 3-1-13 REC colour level

7. MESECAM detect

Signal	•SECAM colour bar
Mode	•EE
Equipment	•Oscilloscope
Measurement point	•TP244 (MESECAM DETECT) [MAIN BOARD]
Adjustment part	•L252 (MESECAM DETECT) [MAIN BOARD]
Specification	•A:B = 3:4

1) Connect an oscilloscope to TP244.
2) Adjust L252 so that A and B are related as follows : A:B = 3:4.

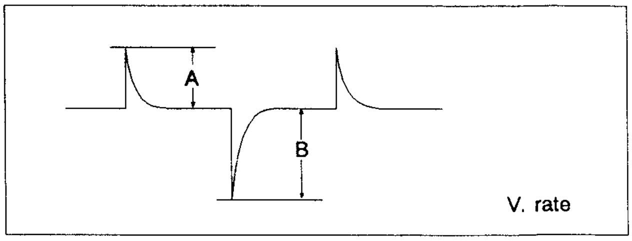


Fig. 3-1-14 MESECAM detect

3.1.4 TIMER CIRUCIT

Note: *Unless otherwise specified, all measurement points and adjustment parts are located on the MAIN BOARD.*

1. Timer clock

Signal	•No signal
Mode	•EE •AUX
Equipment	•Frequency counter
Measurement point	•IC601 pin 64
Adjustment part	•C619 (TIMER CLOCK)
Specification	•1024.005 ± 0.001 Hz (976.5577 ± 0.0010 μsec)

1) Connect a frequency counter to IC601 pin 64 and GND.
2) Short IC601 pin 34 to IC601 pin 63.
3) Short the lead's capacitor C602 once in order to reset IC601.
4) Adjust C619 for 1024.005 ± 0.001 Hz (976.5577 ± 0.0010 μsec).
5) Disconnect a short wire.

3.1.5 AUDIO CIRCUIT

Note: *Unless otherwise specified, all measurement points and adjustment parts are located on the AUDIO UNIT BOARD.*

Important:

Item 1. and 2..

1) Ordinarily performing these adjustments is not required. Adjustments should be performed only if IC1 on the AUDIO UNIT BOARD has been replaced.
2) To adjust, replace fixed resistor with variable chip resistor, then adjust as required.

1. Carrier frequency adjustment

Signal	•No signal
Mode	•EE •NTSC mode
Equipment	•Frequency counter
Measurement point	•IC1 pin 21 •IC1 pin 43
Adjustment part	•R11 (L CARRIER) •R25 (R CARRIER)
Specification	•1.4 MHz ± 5 kHz : R11 •1.8 MHz ± 5 kHz : R25

1) Connect the frequency counter to IC1 pin 21 and GND.
2) Confirm that frequency is 1.4 MHz ± 5 kHz.
3) If necessary, replace R11 with the variable resistor NVP1301-153N and adjust it for 1.4 MHz ± 5 kHz.
4) Connect the frequency counter to IC1 pin 43 and GND.
5) Confirm that frequency is 1.8 MHz ± 5 kHz.
6) If necessary, replace R25 with the variable resistor NVP1301-153N and adjust it for 1.8 MHz ± 5 kHz.

2. Hi-Fi playback audio level

Signal	•Audio 1 kHz (-8 dBs)
Mode	•REC → PB
Equipment	•Audio oscillator •AC millivoltmeter
Measurement point	•Audio out (L ch) •Audio out (R ch)
Adjustment part	•R5 (L DEVIATION) •R30 (R DEVIATION)
Specification	•-8 dBs (0.9 Vp-p, 0.32 Vrms)

1) Connect an audio oscillator to audio input (left channel).
2) Record and playback an audio signal.
3) Confirm that output level is -8 dBs (0.9 Vp-p, 0.32 Vrms).
4) If necessary, replace R5 with the variable resistor NVP1301-473N and adjust it for 18 dBs (0.9 Vp-p, 0.32 Vrms).
5) Connect an audio oscillator to audio input (right channel).
6) Record and playback an audio signal.
7) Confirm that out put level is -8 dBs (0.9 Vp-p, 0.32 Vrms).
8) If necessary, replace R30 with the variable resistor NVP1301-473N and adjust it for -8 dBs (0.9 Vp-p, 0.32 Vrms).

3.1.6 DEMODULATOR CIRUCIT

Note: *Unless otherwise specified, all measurement points and adjustment parts are located on the DEMODULATOR BOARD.*

1. Stereo separation

Signal	•Audio multipix TV signal generator
Mode	•STEREO mode •R mod •L unmod
Equipment	•Oscilloscope
Measurement point	•CN204 pin 2
Adjustment part	•R264 (SEPARATION)
Specification	•Mnimum level

1) Set a signal generator to stereo mode, but adjust only R channel.
2) Connect an oscilloscope to pin 2 of CN204.
3) Adjust R264 for minimum output level.

3.1.7 TUNER CIRCUIT

Note: *Unless otherwise specified, all measurement points and adjustment parts are located on the IF UNIT BOARD.*

1. RF AGC

Note: *Before the following adjustment,*

1) Connect a cable to ANT IN and terminate TV OUT with 75 ohms.

2) Set a TV channel signal generator as follows.

Video: 65 dBμ 75 Ω, colour bar 87.5 % modulation.

Audio: 55 dBμ 75 Ω, 1 kHz ± 50 kHz deviation.

〈Factory Method〉

Signal	•TV broadcasting
Mode	•Tuner
Equipment	•Oscilloscope •TV signal generator
Measurement point	•IF UNIT
Adjustment part	•IF VR
Specification	•-6.0 ± 0.5 dB from maximum level (with minimum noise)

1) Connect an oscilloscope to IF terminal of U/V tuner (front end).
2) Adjust IF VR for maximum level, then adjust IF VR to reduce the IF level -6.0 dB from the maximum level.

《Alternate Method》

Note: *Adjust IF VR (RF AGC) to correct for excess noise in the picture or when streaks cross interference occurs due to strong electrical fields.*

1) Adjust IF VR to minimize noise or streaks on the TV screen.
2) Adjust for noisy picture with strong signal. Then adjust until noise just disappears. Select other channels to confirm proper pick-up of channels.

SECTION 4
CHARTS AND DIAGRAMS

SCHEMATIC DIAGRAM NOTES

Safety precautions
The Components identified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufactures recommended parts.

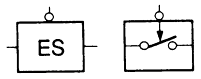
1. Schematic diagram values

Unless otherwise specified.

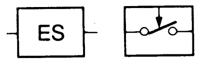
1) All resistance values are in ohms. 1/6 W, 1/8 W (refer to parts list).
   Chip resistors are 1/16 W.
   K: KΩ (1000Ω), M: MΩ (1000KΩ)
2) All capacitance values are in µF, (P: PF).
3) All inductance values in µH, (m: mH).
4) All diodes are 1SS133 or MA165, (refer to parts list).

2. Indications

AUX : Active only at high.
$\overline{\text{AUX}}$: Active only at low.

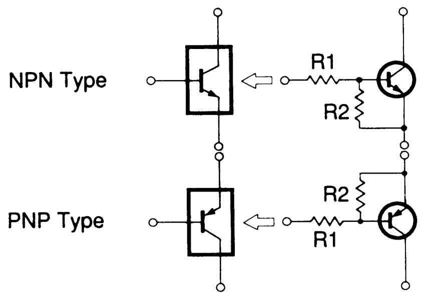


Active only at low for electronic switch.

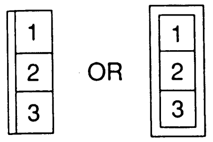


Active only at high for electronic switch.

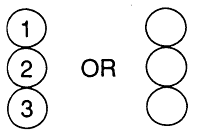
Digital transistor :
The digital transistor includes built in resistors.
It features small size and high reliability.


NPN Type
R1
R2
PNP Type
R2
R1

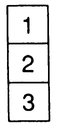
3. Interpreting Connector indications



Removable connector



Direct connection on board

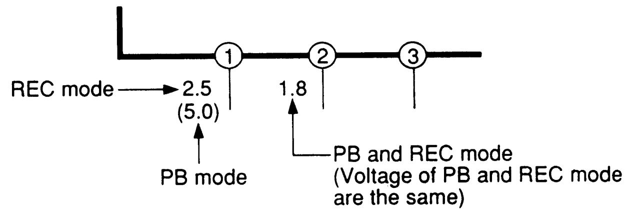


Non-removable Board connector

Connected pattern on board

4. Voltage measurement

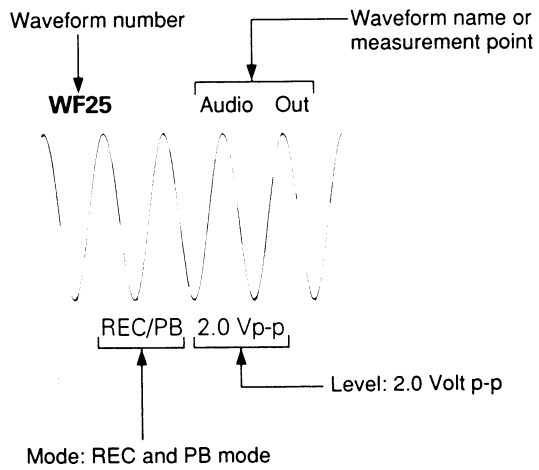
1) Voltage chart
   REC : Color bar signal in SP mode, normal VHS mode.
   PB : Alignment tape, color bar SP mode, normal VHS mode.
   — : Unmeasurable or unnecessary to measure.
2) Audio section
   REC : 1KHz, –8 dBs sine wave signal in SP mode, Normal VHS mode.
   PB : REC then playback it.
3) Movie Camera Section
   Measured as the grey scale pattern and color bar pattern which lighted up brightly is shot in the E-E mode.
4) Schematic diagram
   Voltage Indications for REC and PB mode on Schematic are as shown below.


1
2
3
REC mode
2.5
(5.0)
1.8
PB mode
PB and REC mode
(Voltage of PB and REC mode are the same)

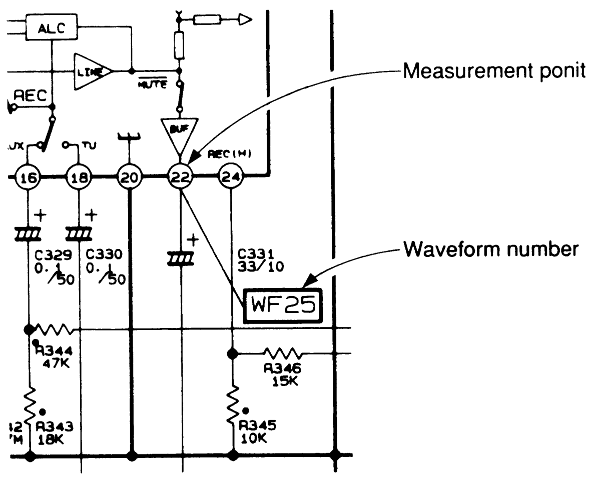
5. Waveform measurement

1) Waveform chart
   REC : Color bar signal in SP mode, normal VHS mode.
   PB : Alignment tape, color bar SP mode, normal VHS mode.
2) Audio Section
   REC : 1KHz, –8 dBs sine wave signal in SP mode, normal VHS mode.
   PB : REC then playback it.
3) Movie Camera Section
   Measured as the grey scale or color bar pattern which lighted up brightly is shot in the E-E mode.

Example:


Waveform number
Waveform name or measurement point
WF25
Audio Out
REC/PB
2.0 Vp-p
Level: 2.0 Volt p-p
Mode: REC and PB mode

4) Schematic diagram
   Waveform indications on schematic are as shown below


ALC
REC
MUTE
BUF
REC(H)
16
18
20
22
24
C329 0.1/50
C330 0.1/50
C331 33/10
WF25
R344 47K
R346 15K
R343 18K
R345 10K
Measurement ponit
Waveform number

6. Signal path Symbols

The arrows indicate the signal path as follows.

⇨	Playback signal path
▭▶	Playback and recording signal path
➡	Recording signal path (including E-E signal path)
▬▷	Y signal path
⇨▷	Color (Chroma) signal path
▭▶▷	R or R-Y signal path
▬▶▷	B or B-Y signal path
⇨▶	Capstan servo path
▭▶▶	Drum servo path
▬▶▶	Reel servo path

CIRCUIT BOARD NOTES

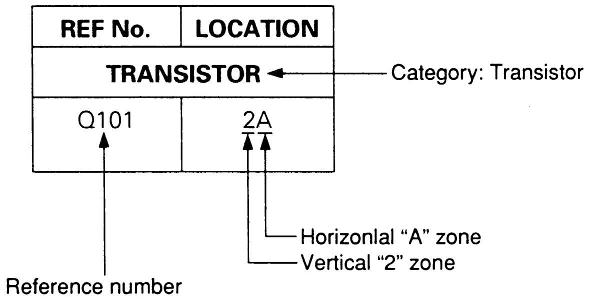
1. Color indications

1) Foil side :
   Foil side patterns are indicated at gray shading.
2) Component side :
   Component side patterns are indicated at RED shading.

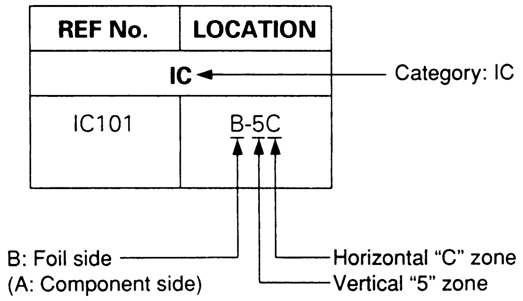
Notes:
Foil side (B side) ;
Parts on the foil side seen from foil face (pattern face) are indicated.
Component side (A side) ;
Parts on the component side seen from component face (parts face) are indicated.

2. Location of SMC indications

1) Single pattern :

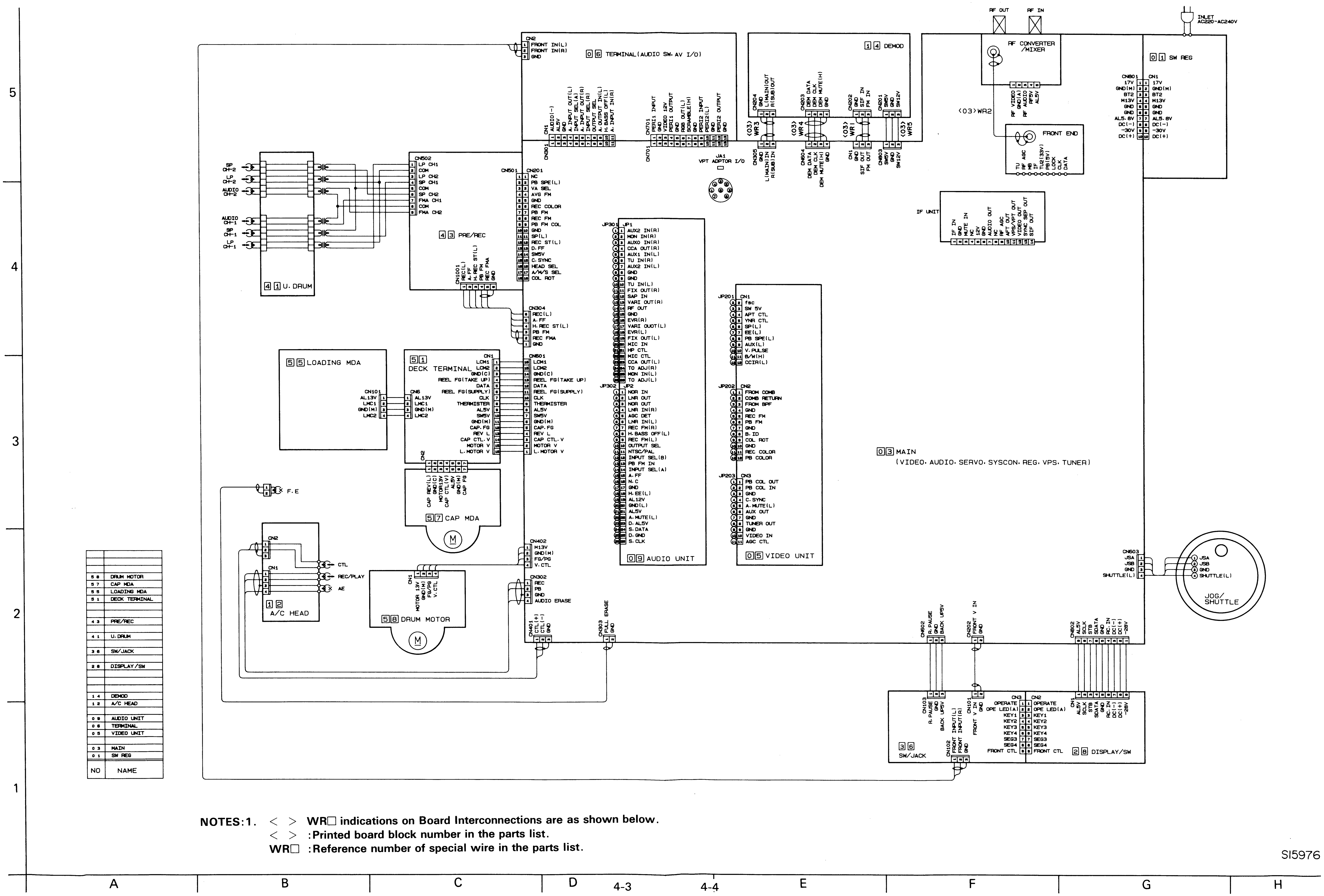

REF No.
LOCATION
TRANSISTOR
Category: Transistor
Q101
2A
Horizonlal "A" zone
Vertical "2" zone
Reference number

2) Double pattern :


REF No.
LOCATION
IC
Category: IC
IC101
B-5C
B: Foil side
(A: Component side)
Horizontal "C" zone
Vertical "5" zone

Notes:
1) **For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION No. 82054C (May 1991).**
2) **For repairing SMC (Surface Mounted Components), please refer to the VIDEO SERVICE GUIDE No. VTS81001.**

4.1 BOARD INTERCONNECTIONS

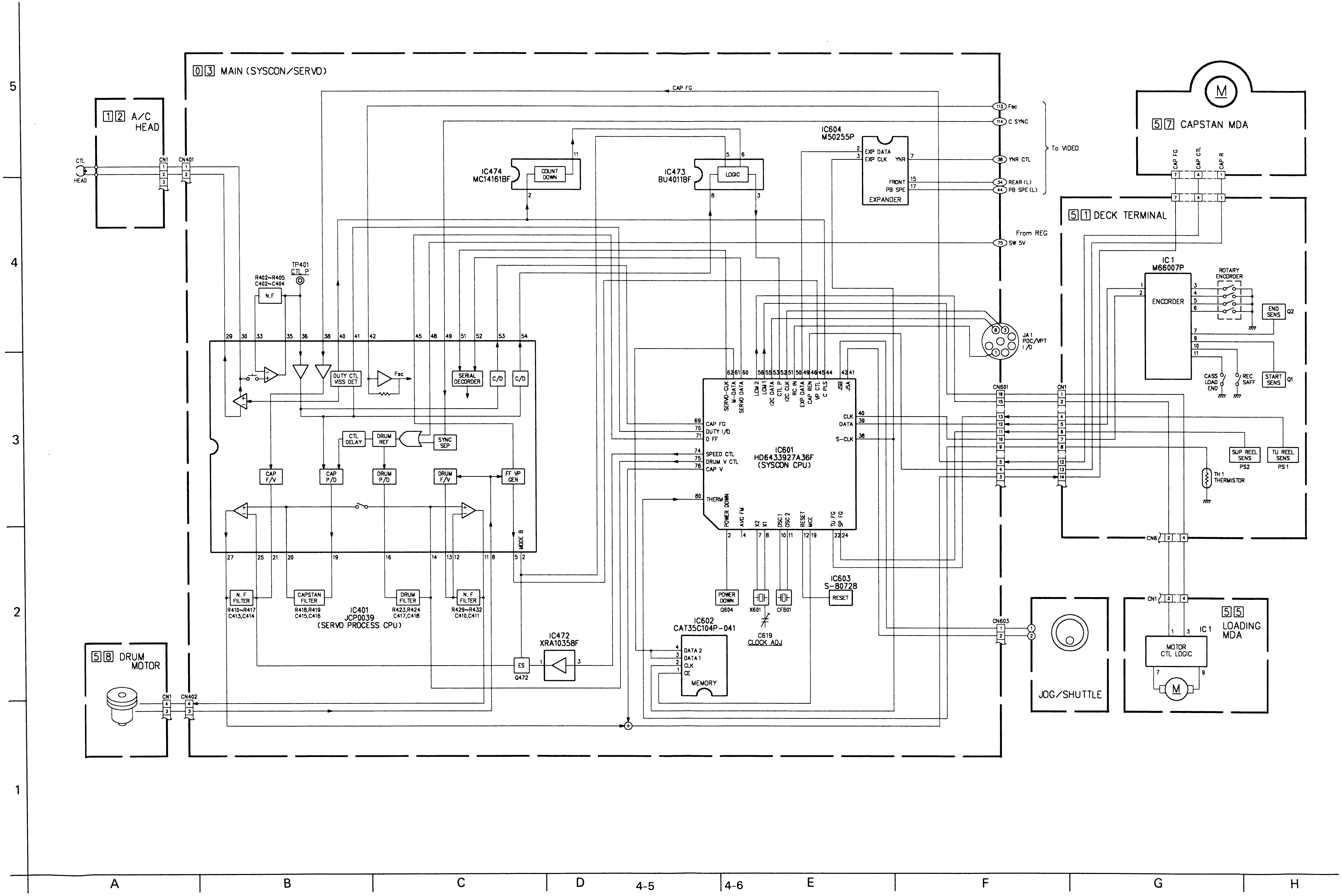

RF OUT
RF IN
INLET AC220~AC240V
0 1 SW REG
CN801
CN1
17V
GND(H)
BT2
M13V
GND
AL5.6V
DC(-)
-30V
DC(+)
RF CONVERTER /MIXER
RF VIDEO
GND(A)
RF AUDIO
RF5V
AL5V
<03>WR2
FRONT END
TU
RF AGC
NB
IF
TU2(33V)
PB(5V)
LOCK
CLK
DATA
1 4 DEMOD
CN204
CN203
CN202
CN201
<03> WR3
<03> WR4
<03> WR1
<03> WR5
CN305
CN304
CN1
CN803
GND
L(MAIN)IN
R(SUB)IN
DEM DATA
DEM CLK
DEM MUTE(H)
SIF OUT
FM IN
SW5V
SW12V
0 6 TERMINAL(AUDIO SW. AV I/O)
CN2
FRONT IN(L)
FRONT IN(R)
GND
CN1
CN301
CN701
JA1
VPT ADPTOR I/O
IF UNIT
IF IN
GND
MUTE IN
NC
12V
GND
AUDIO OUT
NC
RF AGC
AFT OUT
VPS/VPT OUT
VIDEO OUT
SYNC SEP OUT
SIF OUT
4 3 PRE/REC
CN502
LP CH1
COM
LP CH2
SP CH1
COM
SP CH2
FMA CH1
COM
FMA CH2
CN501
CN201
NC
PB SPE(L)
VA SEL
AVG FM
GND
REC COLOR
PB FM
REC FM
PB FM COL
GND
SP(L)
REC ST(L)
D.FF
SW5V
C.SYNC
HEAD SEL
A/M/S SEL
COL ROT
CN1001
REC(L)
A.FF
H.REC ST(L)
PB FM
REC FMA
GND
SP CH-2
LP CH-2
AUDIO CH-2
AUDIO CH-1
SP CH-1
LP CH-1
4 1 U. DRUM
5 5 LOADING MDA
CN101
AL13V
LMC1
GND(M)
LMC2
5 1 DECK TERMINAL
CN1
CN6
LCM1
LCM2
GND(C)
REEL FG(TAKE UP)
DATA
REEL FG(SUPPLY)
CLK
THERMISTER
AL5V
SW5V
GND(M)
CAP.FG
REV L
CAP CTL.V
MOTOR V
L.MOTOR V
CN601
CN2
CAP REV(L)
GND(C)
MOTOR13V
CAP CTL(V)
AL5V
GND(M)
CAP FG
5 7 CAP MDA
F.E
CN2
CN1
CTL
REC/PLAY
AE
1 2 A/C HEAD
CN1
MOTOR 13V
GND(M)
FG/PG
V.CTL
5 8 DRUM MOTOR
CN402
M13V
GND(M)
FG/PG
V.CTL
CN302
REC
PB
GND
AUDIO ERASE
CN401
CTL(+)
CTL(-)
GND
CN303
FULL ERASE
GND
JP301
JP1
AUX2 IN(R)
MON IN(R)
AUXO IN(R)
CCA OUT(R)
AUX1 IN(L)
TU IN(R)
AUX2 IN(L)
GND
GND
TU IN(L)
FIX OUT(R)
SAP IN
VARI OUT(R)
RF OUT
GND
EVR(R)
VARI OUOT(L)
EVR(L)
FIX OUT(L)
MIC IN
HP CTL
MIC CTL
CCA OUT(L)
TU ADJ(R)
MON IN(L)
TO ADJ(L)
JP302
JP2
NOR IN
LNR OUT
NOR OUT
LNR IN(R)
AGC DET
LNR IN(L)
REC FM(R)
H.BASS OFF(L)
REC FM(L)
OUTPUT SEL
NTSC/PAL
INPUT SEL(B)
PB FM IN
INPUT SEL(A)
A.FF
N.C
GND
H.EE(L)
AL12V
GND(L)
AL5V
A.MUTE(L)
D.AL5V
S.DATA
D.GND
S.CLK
0 9 AUDIO UNIT
JP201
CN1
fsc
SW 5V
APT CTL
YNR CTL
SP(L)
EE(L)
PB SPE(L)
AUX(L)
V.PULSE
B/W(H)
CCIR(L)
JP202
CN2
FROM COMB
COMB RETURN
FROM BPF
GND
REC FM
PB FM
GND
B.ID
COL ROT
GND
REC COLOR
PB COLOR
JP203
CN3
PB COL OUT
PB COL IN
GND
C.SYNC
A.MUTE(L)
AUX OUT
GND
TUNER OUT
GND
VIDEO IN
AGC CTL
0 5 VIDEO UNIT
0 3 MAIN
(VIDEO. AUDIO. SERVO. SYSCON. REG. VPS. TUNER)
CN603
JSA
JSB
GND
SHUTTLE(L)
JOG/ SHUTTLE
CN602
R.PAUSE
GND
BACK UP5V
CN202
FRONT V IN
GND
CN802
AL5V
SCLK
STB
SDATA
GND
RC.IN
DC(-)
DC(+)
-28V
CN103
CN101
CN102
FRONT INPUT(L)
FRONT INPUT(R)
3 6 SW/JACK
CN3
CN2
OPERATE
OPE LED(A)
KEY1
KEY2
KEY3
KEY4
SEG3
SEG4
FRONT CTL
2 8 DISPLAY/SW
A
B
C
D
E
F
G
H
1
2
3
4
5

NO	NAME
5 8	DRUM MOTOR
5 7	CAP MDA
5 5	LOADING MDA
5 1	DECK TERMINAL
4 3	PRE/REC
4 1	U. DRUM
3 6	SW/JACK
2 8	DISPLAY/SW
1 4	DEMOD
1 2	A/C HEAD
0 9	AUDIO UNIT
0 6	TERMINAL
0 5	VIDEO UNIT
0 3	MAIN
0 1	SW REG

NOTES:1. < > WR☐ indications on Board Interconnections are as shown below.
< > :Printed board block number in the parts list.
WR☐ :Reference number of special wire in the parts list.

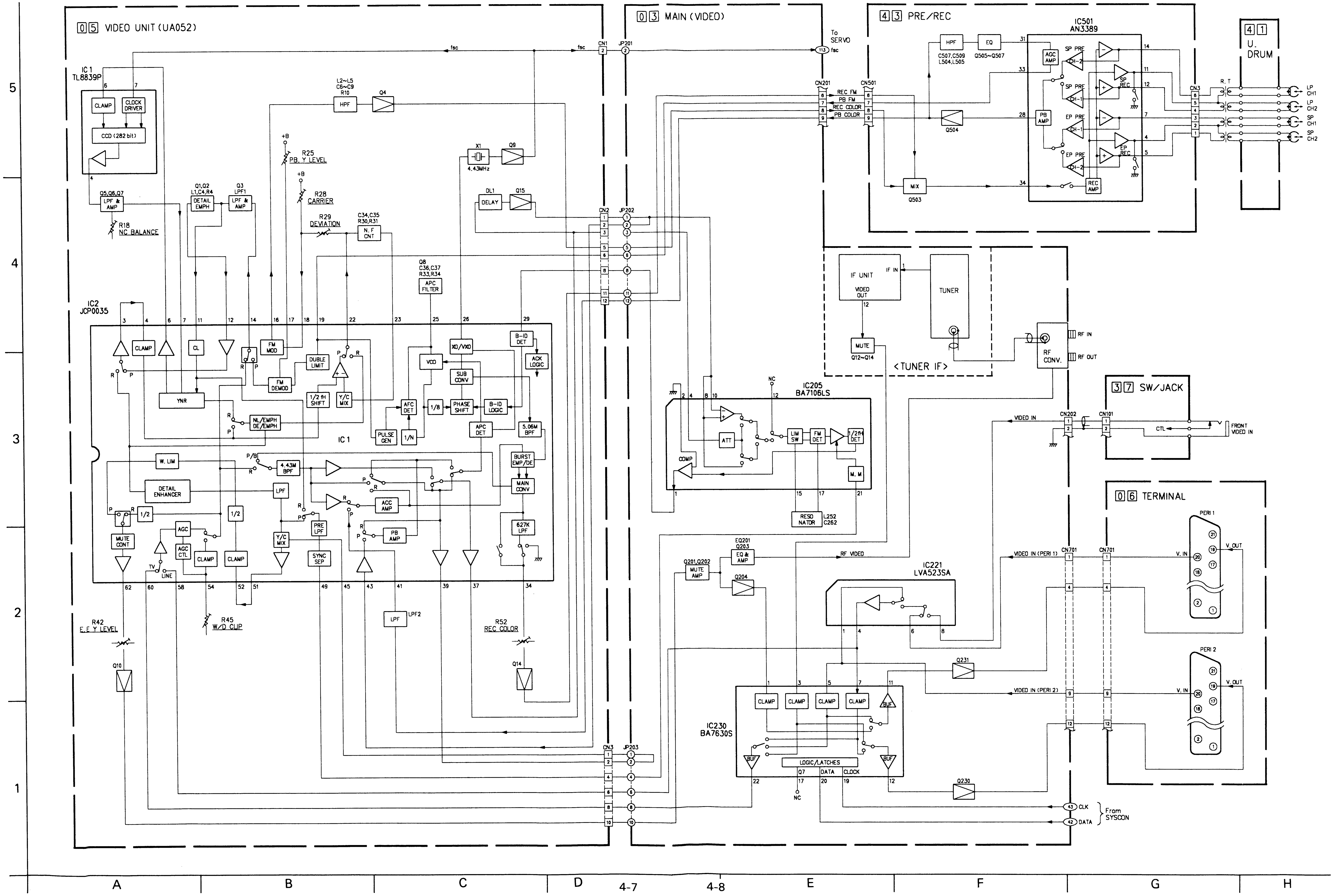
SI5976

4.2 SYSCON/SERVO BLOCK DIAGRAM



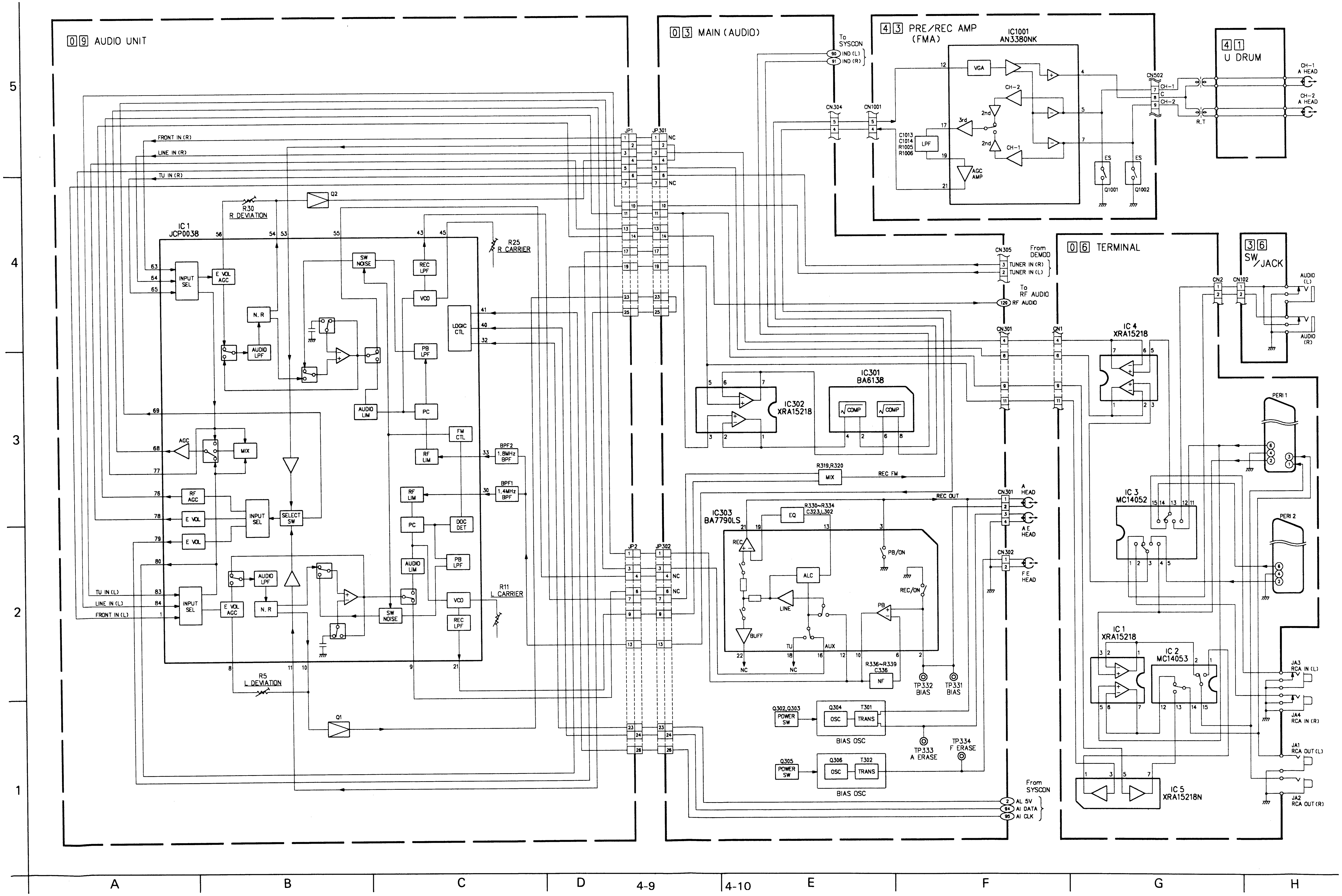
03 MAIN (SYSCON/SERVO)
12 A/C HEAD
CTL
HEAD
CN1
CN401
58 DRUM MOTOR
CN402
CAP FG
IC474
MC14161BF
COUNT DOWN
IC473
BU4011BF
LOGIC
IC604
M50255P
EXP DATA
EXP CLK
YNR
FRONT
PB SPE
EXPANDER
113 Fsc
114 C SYNC
38 YNR CTL
34 REAR (L)
44 PB SPE (L)
To VIDEO
From REG
75 SW 5V
JA1
PDC/VPT I/O
TP401
CTL P
R402~R405
C402~C404
N.F
DUTY CTL VISS DET
Fsc
SERIAL DECORDER
C/D
CTL DELAY
DRUM REF
SYNC SEP
CAP F/V
CAP P/D
DRUM P/D
DRUM F/V
FF VP GEN
MODE B
N.F FILTER
R410~R417
C413,C414
CAPSTAN FILTER
R418,R419
C415,C416
IC401
JCP0039
(SERVO PROCESS CPU)
DRUM FILTER
R423,R424
C417,C418
N.F FILTER
R429~R432
C410,C411
IC472
XRA10358F
ES
Q472
IC601
HD6433927A36F
(SYSCON CPU)
SERVO-CLK
M-DATA
SERVO DATA
LCM 2
LCM 1
I2C DATA
CTL P
I2C CLK
RC IN
EXP DATA
CAP REN
VP CTL
C PLS
JSB
JSA
CAP FG
DUTY I/O
D FF
SPEED CTL
DRUM V CTL
CAP V
THERM
CLK
DATA
S-CLK
POWER DOWN
AVG FM
X2
X1
OSC 1
OSC 2
RESET
MCE
TU FG
SP FG
POWER DOWN
Q604
X601
CF601
C619
CLOCK ADJ
IC603
S-80728
RESET
IC602
CAT35C104P-041
DATA 2
DATA 1
CLK
CE
MEMORY
CN601
CN603
57 CAPSTAN MDA
CAP FG
CAP CTL
CAP R
51 DECK TERMINAL
IC1
M66007P
ENCORDER
ROTARY ENCODER
END SENS
Q2
CASS LOAD END
REC SAFF
START SENS
Q1
SUP REEL SENS
PS2
TU REEL SENS
PS1
TH1 THERMISTOR
CN6
CN1
JOG/SHUTTLE
55 LOADING MDA
IC1
MOTOR CTL LOGIC
M
5
4
3
2
1
A
B
C
D
E
F
G
H

4.3 VIDEO BLOCK DIAGRAM



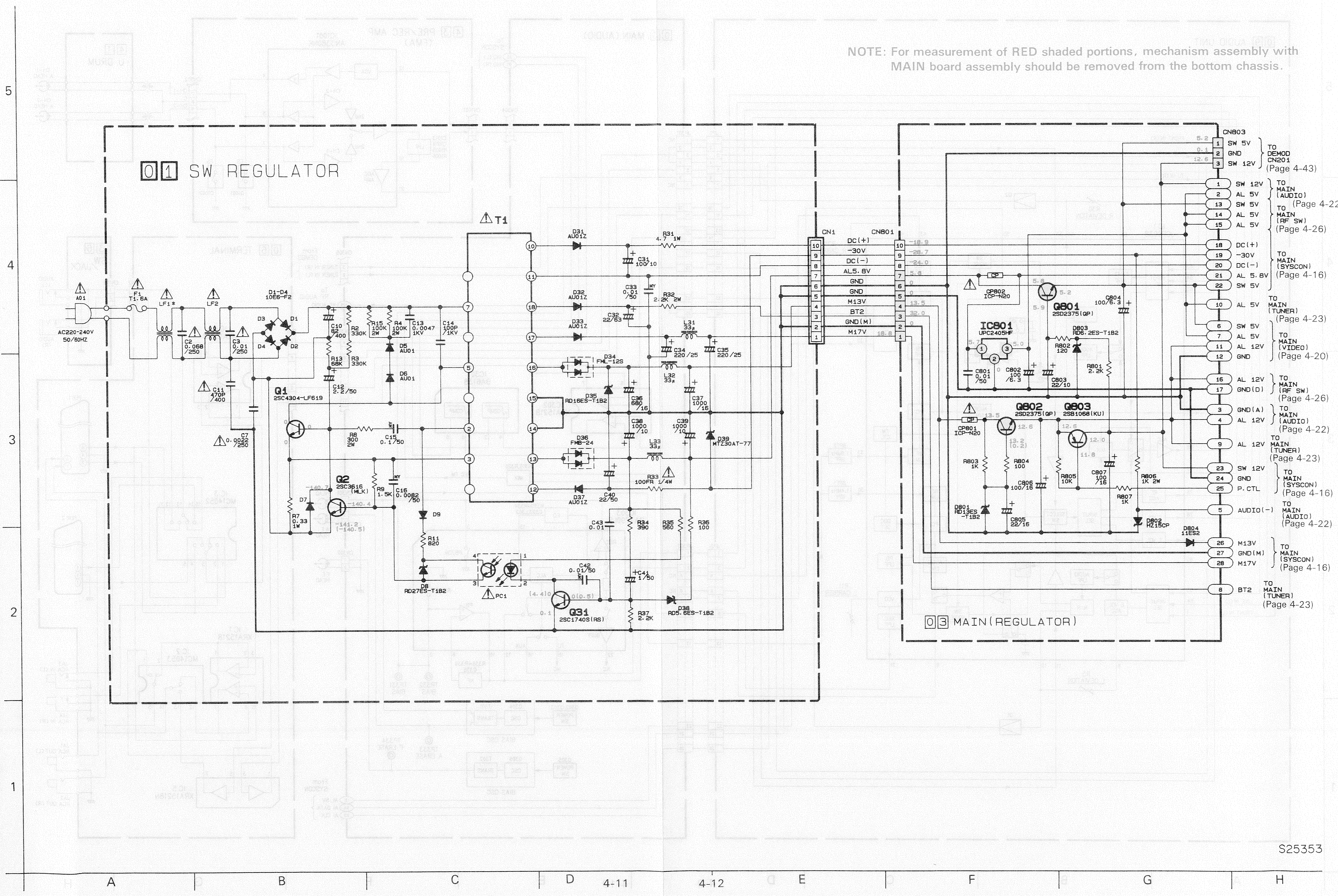
05 VIDEO UNIT (UA052)
03 MAIN (VIDEO)
43 PRE/REC
41 U. DRUM
37 SW/JACK
06 TERMINAL
<TUNER IF>
IC1 TL8839P
CLAMP
CLOCK DRIVER
CCD (282 bit)
Q5,Q6,Q7 LPF & AMP
R18 NC BALANCE
Q1,Q2 L1,C4,R4 DETAIL EMPH
Q3 LPF1 LPF & AMP
L2~L5 C6~C9 R10 HPF
Q4
R25 PB. Y LEVEL
R28 CARRIER
R29 DEVIATION
C34,C35 R30,R31 N. F CNT
X1 4.43MHz
Q9
DL1 DELAY
Q15
Q8 C36,C37 R33,R34 APC FILTER
fsc
CN1
JP201
To SERVO
fsc
CN2
JP202
CN3
JP203
IC2 JCP0035
YNR
CL
FM MOD
FM DEMOD
DUBLE LIMIT
1/2 fH SHIFT
Y/C MIX
VCO
XO/VXO
SUB CONV
PHASE SHIFT
B-ID DET
ACK LOGIC
B-ID LOGIC
AFC DET
1/8
1/N
PULSE GEN
APC DET
5.06M BPF
NL/EMPH DE/EMPH
IC 1
W. LIM
DETAIL ENHANCER
4.43M BPF
BURST EMP/DE
MAIN CONV
ACC AMP
LPF
PRE LPF
PB AMP
627K LPF
MUTE CONT
AGC
AGC CTL
1/2
Y/C MIX
SYNC SEP
TV
LINE
R42 E.E Y LEVEL
Q10
R45 W/D CLIP
LPF2
R52 REC COLOR
Q14
IC501 AN3389
HPF
EQ
C507,C509 L504,L505
Q505~Q507
AGC AMP
SP PRE CH-2
SP PRE CH-1
SP REC
EP PRE CH-1
EP PRE CH-2
EP REC
PB AMP
REC AMP
MIX
Q503
Q504
CN201
CN501
REC FM
PB FM
REC COLOR
PB COLOR
R. T
LP CH1
LP CH2
SP CH1
SP CH2
IF UNIT
IF IN
VIDEO OUT
TUNER
MUTE
Q12~Q14
RF CONV.
RF IN
RF OUT
IC205 BA7106LS
NC
ATT
COMP
LIM SW
FM DET
1/2fH DET
M. M
RESO NATOR
L252 C262
VIDEO IN
CN202
CN101
CTL
FRONT VIDEO IN
EQ201 Q203 EQ & AMP
RF VIDEO
Q201,Q202 MUTE AMP
Q204
IC221 LVA523SA
Q231
Q230
IC230 BA7630S
CLAMP
BUF
LOGIC/LATCHES
Q7
DATA
CLOCK
CN701
VIDEO IN (PERI 1)
VIDEO IN (PERI 2)
PERI 1
PERI 2
V. IN
V. OUT
CLK
DATA
From SYSCON
A
B
C
D
E
F
G
H
1
2
3
4
5

4.4 AUDIO BLOCK DIAGRAM


09 AUDIO UNIT
IC1
JCP0038
INPUT SEL
E VOL AGC
N.R
AUDIO LPF
SW NOISE
REC LPF
VCO
PB LPF
LOGIC CTL
AUDIO LIM
PC
FM CTL
RF LIM
BPF2 1.8MHz BPF
BPF1 1.4MHz BPF
DOC DET
AGC
MIX
RF AGC
E VOL
SELECT SW
R30 R DEVIATION
R25 R CARRIER
R11 L CARRIER
R5 L DEVIATION
Q1
Q2
FRONT IN (R)
LINE IN (R)
TU IN (R)
TU IN (L)
LINE IN (L)
FRONT IN (L)
JP1
JP301
JP2
JP302
NC
03 MAIN (AUDIO)
To SYSCON
IND (L)
IND (R)
CN304
CN1001
CN305
From DEMOD
TUNER IN (R)
TUNER IN (L)
To RF AUDIO
RF AUDIO
CN301
IC302 XRA15218
IC301 BA6138
COMP
R319,R320
MIX
REC FM
REC OUT
IC303 BA7790LS
EQ
R330~R334 C323,L302
REC
ALC
LINE
BUFF
TU
AUX
PB
PB/ON
REC/ON
R336~R339 C336
NF
TP332 BIAS
TP331 BIAS
Q302,Q303 POWER SW
Q304 OSC
T301 TRANS
BIAS OSC
TP333 A ERASE
TP334 F ERASE
Q305 POWER SW
Q306 OSC
T302 TRANS
A HEAD
A.E HEAD
CN302
F.E HEAD
From SYSCON
AL 5V
AI DATA
AI CLK
43 PRE/REC AMP (FMA)
IC1001 AN3380NK
VGA
CH-2
CH-1
2nd
3rd
LPF
AGC AMP
C1013 C1014 R1005 R1006
ES
Q1001
Q1002
CN502
CH-1
C
CH-2
R.T
41 U DRUM
CH-1 A HEAD
CH-2 A HEAD
06 TERMINAL
CN1
IC4 XRA15218
IC3 MC14052
IC1 XRA15218
IC2 MC14053
IC5 XRA15218N
CN2
CN102
36 SW/JACK
AUDIO (L)
AUDIO (R)
PERI 1
PERI 2
JA3 RCA IN (L)
JA4 RCA IN (R)
JA1 RCA OUT (L)
JA2 RCA OUT (R)
A
B
C
D
E
F
G
H
1
2
3
4
5

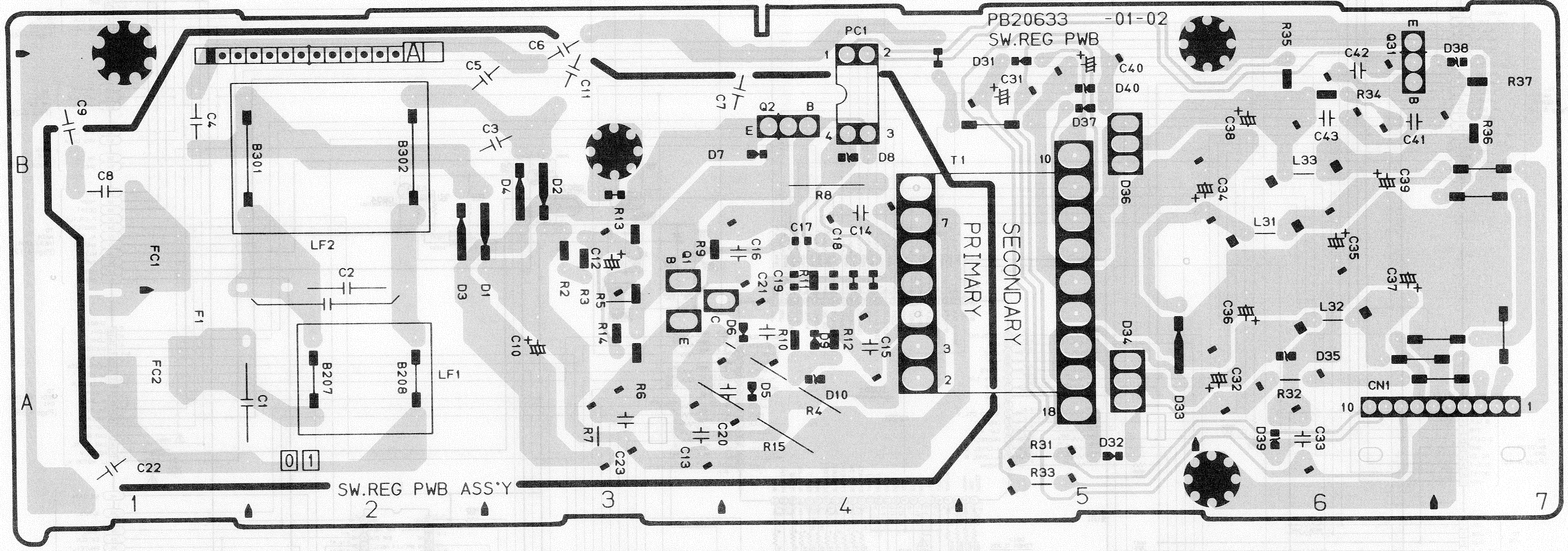
4.5 SWITCHING REGULATOR & MAIN (REGULATOR) SCHEMATIC DIAGRAMS

NOTE: For measurement of RED shaded portions, mechanism assembly with MAIN board assembly should be removed from the bottom chassis.



01 SW REGULATOR
03 MAIN(REGULATOR)
AC220-240V 50/60HZ
A01
F1 T1.6A
LF1
LF2
C2 0.068 /250
C3 0.01 /250
C11 470P /400
C7 0.0022 /250
D1-D4 10E6-F2
D1
D2
D3
D4
C10 82 /400
R2 330K
R15 100K 2W
R4 100K 2W
C13 0.0047 1KV
C14 100P /1KV
R13 68K
R3 330K
D5 AU01
D6 AU01
C12 2.2/50
Q1 2SC4304-LF619
R8 300 2W
C15 0.1/50
Q2 2SC3616 (MLK)
R9 1.5K
C16 0.0082 /50
D7
R7 0.33 1W
D9
R11 820
D8 RD27ES-T1B2
PC1
T1
D31 AU01Z
R31 4.7 1W
C31 100/10
D32 AU01Z
C33 0.01 /50
R32 2.2K 2W
C32 22/63
D33 AU01Z
L31 33μ
C34 220/25
C35 220/25
D34 FML-12S
L32 33μ
D35 RD16ES-T1B2
C36 680 /16
C37 1000 /16
C38 1000 /10
C39 1000 /10
D36 FMB-24
L33 33μ
D39 MTZ30AT-77
R33 100FR 1/4W
D37 AU01Z
C40 22/50
C43 0.01
R34 390
R35 560
R36 100
C42 0.01/50
C41 1/50
Q31 2SC1740S(RS)
R37 2.2K
D38 RD5.6ES-T1B2
CN1
CN801
DC(+)
-30V
DC(-)
AL5.8V
GND
GND
M13V
BT2
GND(M)
M17V
CN803
SW 5V
GND
SW 12V
TO DEMOD CN201 (Page 4-43)
CP802 ICP-N20
Q801 2SD2375(QP)
IC801 UPC2405HF
C804 100/6.3
D803 RD6.2ES-T1B2
R802 120
R801 2.2K
C801 0.01 /50
C802 100 /6.3
C803 22/10
CP801 ICP-N20
Q802 2SD2375(QP)
Q803 2SB1068(KU)
R803 1K
R804 100
C806 100/16
R805 10K
C807 100 /16
R806 1K 2W
R807 1K
D801 RD13ES -T1B2
C805 22/16
D802 HZ15CP
D804 11ES2
SW 12V
AL 5V
TO MAIN (AUDIO) (Page 4-22)
SW 5V
AL 5V
AL 5V
TO MAIN (RF SW) (Page 4-26)
DC(+)
-30V
DC(-)
AL 5.8V
SW 5V
TO MAIN (SYSCON) (Page 4-16)
AL 5V
TO MAIN (TUNER) (Page 4-23)
SW 5V
AL 5V
AL 12V
GND
TO MAIN (VIDEO) (Page 4-20)
AL 12V
GND(D)
TO MAIN (RF SW) (Page 4-26)
GND(A)
AL 12V
TO MAIN (AUDIO) (Page 4-22)
AL 12V
TO MAIN (TUNER) (Page 4-23)
SW 12V
GND
P.CTL
TO MAIN (SYSCON) (Page 4-16)
AUDIO(-)
TO MAIN (AUDIO) (Page 4-22)
M13V
GND(M)
M17V
TO MAIN (SYSCON) (Page 4-16)
BT2
TO MAIN (TUNER) (Page 4-23)
S25353
A
B
C
D
E
F
G
H
1
2
3
4
5

4.6 SWITCHING REGULATOR CIRCUIT BOARD



PB20633 -01-02
SW.REG PWB
SW.REG PWB ASS'Y
PC1
Q1
Q2
Q31
T1
PRIMARY
SECONDARY
CN1
LF1
LF2
FC1
FC2
F1
B301
B302
B207
B208
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
C12
C13
C14
C15
C16
C17
C18
C19
C20
C21
C22
C23
C31
C32
C33
C34
C35
C36
C37
C38
C39
C40
C41
C42
C43
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D31
D32
D33
D34
D35
D36
D37
D38
D39
D40
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R31
R32
R33
R34
R35
R36
R37
L31
L32
L33
E
B
C
A
1
2
3
4
5
6
7
10
18
01

MAIN COMPONENT PARTS
LOCATION GUIDE<SW REG PWB>

REF. No.	LOCATION
TRANSISTOR	
Q1	3A
Q2	4B
Q31	6B

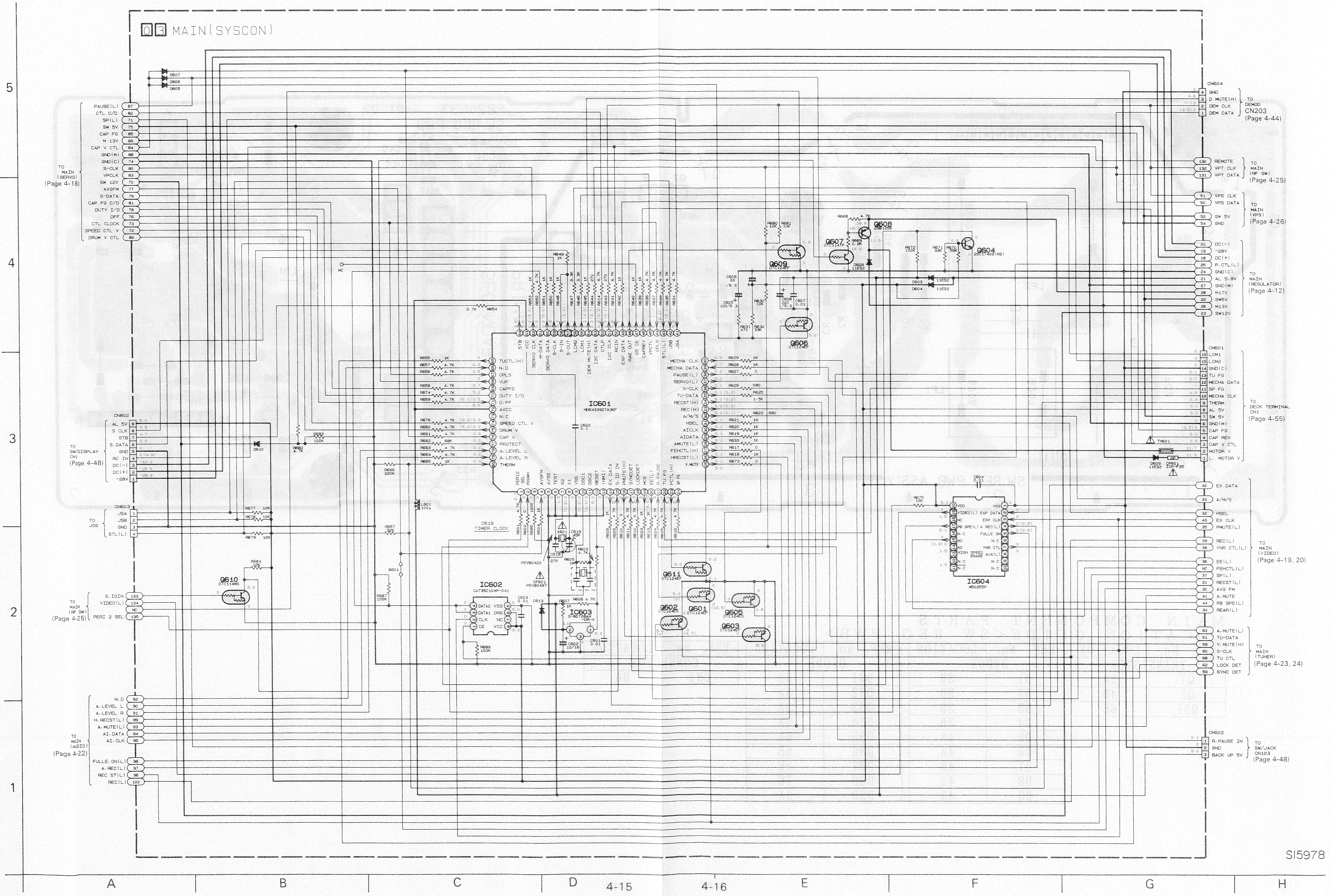
REF. No.	LOCATION
DIODE	
D1	3B
D2	3B
D3	2B
D4	3B
D5	4A
D6	4A
D7	4B
D8	4B
D9	4A

REF. No.	LOCATION
DIODE	
D31	5B
D32	5A
D33	5A
D34	5A
D35	6A
D36	5B
D37	5B
D38	7B
D39	6A

REF. No.	LOCATION
CONNECTOR	
CN1	6A

4.7 SYSTEM CONTROL SCHEMATIC DIAGRAM

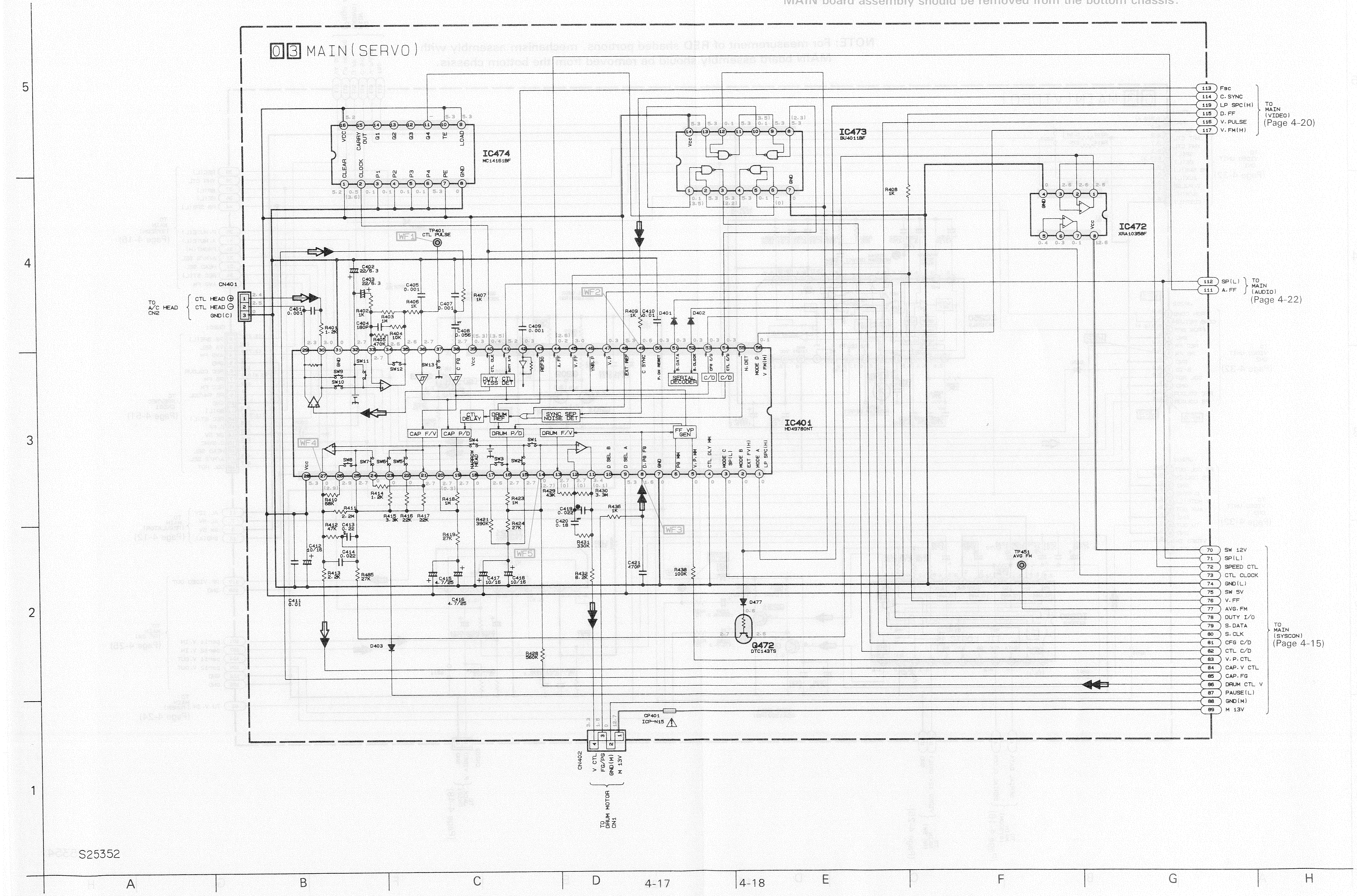
NOTE: For measurement of RED shaded portions, mechanism assembly with MAIN board assembly should be removed from the bottom chassis.



03 MAIN(SYSCON)
TO MAIN (SERVO) (Page 4-18)
PAUSE(L)
CTL C/D
SP(L)
SW 5V
CAP FG
M 13V
CAP V CTL
GND(M)
GND(C)
S-CLK
VPCLK
SW 12V
AVGFM
S-DATA
CAP FG C/D
DUTY I/O
DFF
CTL CLOCK
SPEED CTL V
DRUM V CTL
CN802
TO SW/DISPLAY CN1 (Page 4-48)
AL 5V
S CLK
STB
S.DATA
GND
RC IN
DC(-)
DC(+)
-28V
CN603
TO JOG
JSA
JSB
GND
STL(L)
TO MAIN (RF SW) (Page 4-25)
S. IDIN
VIDEO(L)
NC
PERI 2 SEL
TO MAIN (AUDIO) (Page 4-22)
N.D
A.LEVEL L
A.LEVEL R
H.RECST(L)
A.MUTE(L)
AI.DATA
AI.CLK
FULLE.ON(L)
A.REC(L)
REC ST(L)
REC(L)
IC601
HD6433927A36F
IC602
CAT35C104P-041
IC603
IC604
Q602
Q603
Q604
Q605
Q606
Q607
Q608
Q609
Q610
Q611
D605
D606
D607
D610
X601
C619 TIMER CLOCK
CN604
TO DEMOD CN203 (Page 4-44)
GND
D MUTE(H)
DEM CLK
DEM DATA
TO MAIN (RF SW) (Page 4-25)
REMOTE
VPT CLK
VPT DATA
TO MAIN (VPS) (Page 4-26)
VPS CLK
VPS DATA
SW 5V
GND
TO MAIN (REGULATOR) (Page 4-12)
DC(-)
-28V
DC(+)
P.CTL(L)
GND(C)
AL 5.8V
GND(M)
M17V
SW5V
M13V
SW12V
CN601
TO DECK TERMINAL CN1 (Page 4-55)
LCM1
LCM2
GND(C)
TU FG
MECHA DATA
SP FG
MECHA CLK
THERM
AL 5V
SW 5V
GND(M)
CAP FG
CAP REV
CAP V CTL
MOTOR V
L. MOTOR V
TO MAIN (VIDEO) (Page 4-19, 20)
EX DATA
A/M/S
HSEL
EX CLK
PMUTE(L)
REC(L)
YNR CTL(L)
EE(L)
FEHCTL(L)
SP(L)
RECST(L)
AVG FM
A.MUTE
PB SPE(L)
REAR(L)
TO MAIN (TUNER) (Page 4-23, 24)
A.MUTE(L)
TU-DATA
V.MUTE(H)
S-CLK
TU CTL
LOCK DET
SYNC DET
CN602
TO SW/JACK CN103 (Page 4-48)
R.PAUSE IN
GND
BACK UP 5V
SI5978
A
B
C
D
E
F
G
H
1
2
3
4
5

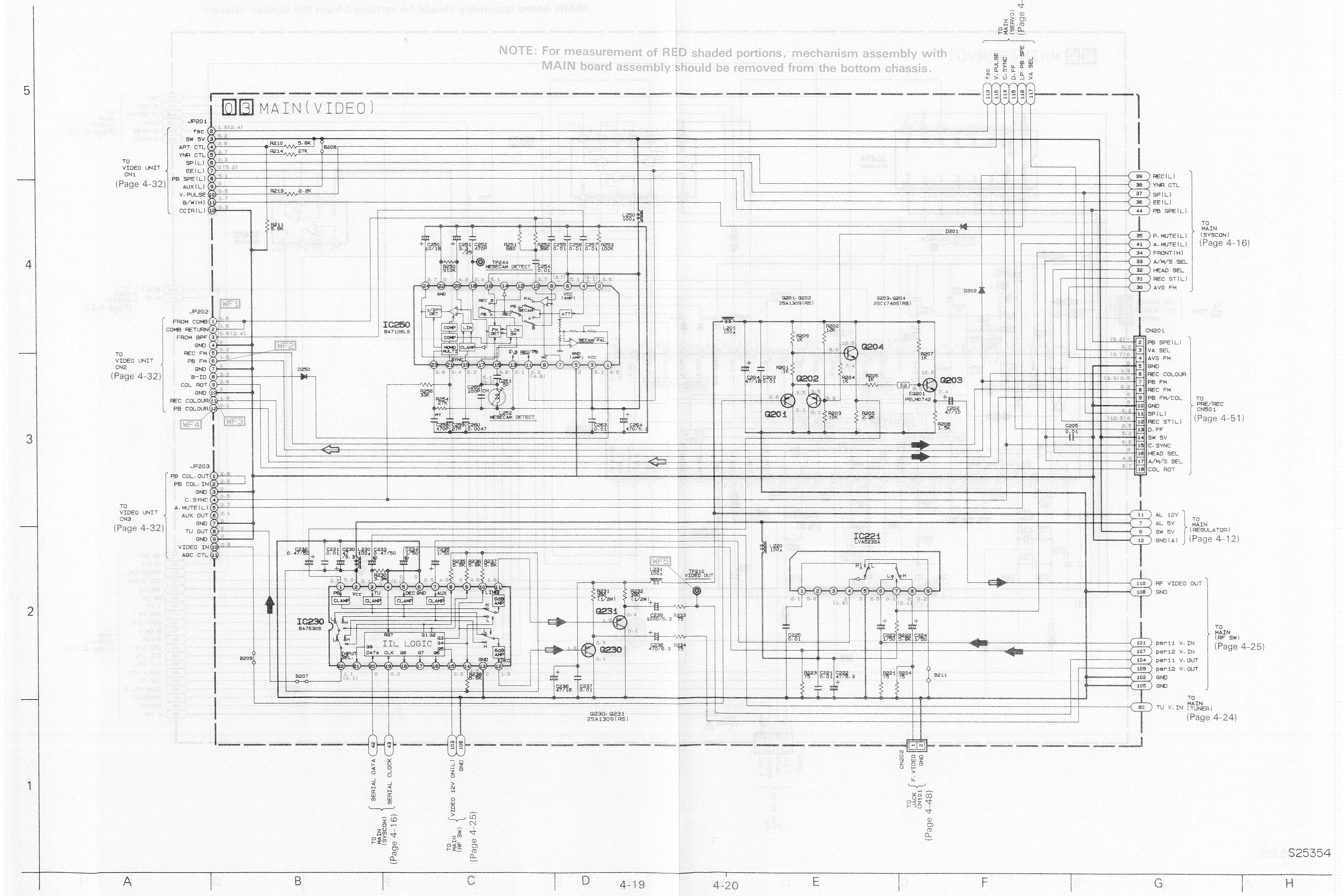
4.8 SERVO SCHEMATIC DIAGRAM

NOTE: For measurement of RED shaded portions, mechanism assembly with MAIN board assembly should be removed from the bottom chassis.


03 MAIN(SERVO)
IC474
MC14161BF
VCC
CARRY OUT
Q1
Q2
Q3
Q4
TE
LOAD
CLEAR
CLOCK
P1
P2
P3
P4
PE
GND
IC473
BU4011BF
IC472
XRA10358F
IC401
HD49780NT
TP401
CTL PULSE
WF1
WF2
WF3
WF4
WF5
CN401
TO A/C HEAD CN2
CTL HEAD ⊕
CTL HEAD ⊖
GND(C)
DUTY CTL VISS DET
SERIAL DECODER
C/D
CTL DELAY
DRUM REF
SYNC SEP NOISE DET
CAP F/V
CAP P/D
DRUM P/D
DRUM F/V
FF VP GEN
R408 1K
R409 1K
C410 0.01
D401
D402
D403
D477
Q472
DTC143TS
TP451
AVG FM
CP401
ICP-N15
CN402
V CTL
FG/PG
GND(M)
M 13V
TO DRUM MOTOR CN1
113 Fsc
114 C.SYNC
119 LP SPC(H)
115 D.FF
116 V.PULSE
117 V.FM(H)
TO MAIN (VIDEO) (Page 4-20)
112 SP(L)
111 A.FF
TO MAIN (AUDIO) (Page 4-22)
70 SW 12V
71 SP(L)
72 SPEED CTL
73 CTL CLOCK
74 GND(L)
75 SW 5V
76 V.FF
77 AVG.FM
78 DUTY I/O
79 S.DATA
80 S.CLK
81 CFG C/D
82 CTL C/D
83 V.P.CTL
84 CAP.V CTL
85 CAP.FG
86 DRUM CTL V
87 PAUSE(L)
88 GND(M)
89 M 13V
TO MAIN (SYSCON) (Page 4-15)
5
4
3
2
1
A
B
C
D
E
F
G
H

S25352

4.9 VIDEO SCHEMATIC DIAGRAM



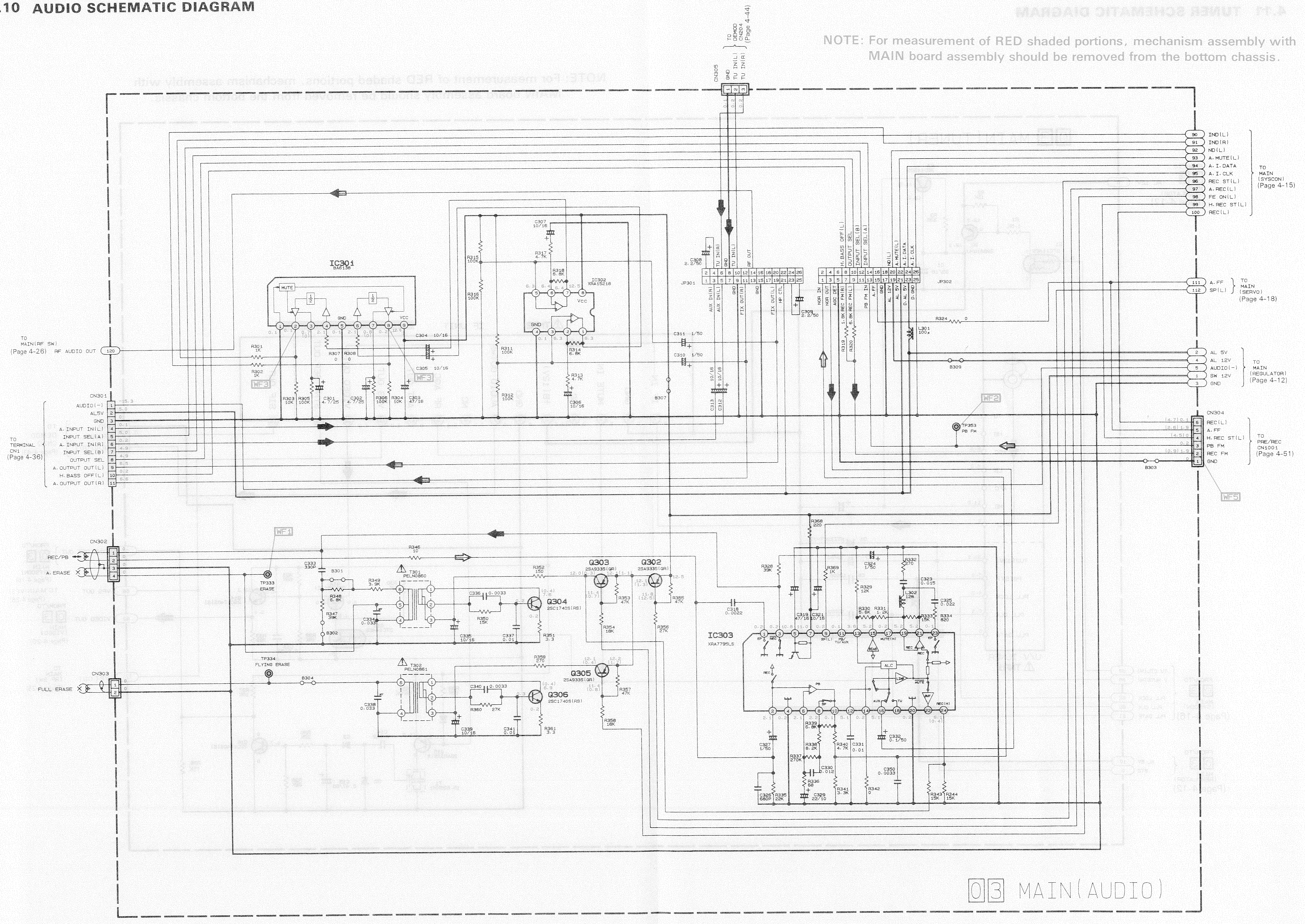
NOTE: For measurement of RED shaded portions, mechanism assembly with MAIN board assembly should be removed from the bottom chassis.

03 MAIN(VIDEO)
JP201
fsc
SW 5V
APT CTL
YNR CTL
SP(L)
EE(L)
PB SPE(L)
AUX(L)
V.PULSE
B/W(H)
CCIR(L)
TO VIDEO UNIT CN1 (Page 4-32)
JP202
FROM COMB
COMB RETURN
FROM BPF
GND
REC FM
PB FM
B-ID
COL ROT
REC COLOUR
PB COLOUR
TO VIDEO UNIT CN2 (Page 4-32)
JP203
PB COL. OUT
PB COL. IN
C. SYNC
A. MUTE(L)
AUX OUT
TU OUT
VIDEO IN
AGC CTL
TO VIDEO UNIT CN3 (Page 4-32)
WF1
WF2
WF3
WF4
WF5
IC250
BA7106LS
TP244 MESECAM DETECT
L252 MESECAM DETECT
IC230
BA7630S
IIL LOGIC
TP210 VIDEO OUT
Q230
Q231
Q230, Q231 2SA1309(RS)
Q201
Q202
Q203
Q204
Q201, Q202 2SA1309(RS)
Q203, Q204 2SC1740S(RS)
EQ201 PELN0742
IC221
LVA523SA
D201
D202
D250
CN201
TO MAIN (SERVO) (Page 4-18)
fsc
V.PULSE
C.SYNC
D.FF
LP PB SPE
VA SEL
REC(L)
YNR CTL
SP(L)
EE(L)
PB SPE(L)
P.MUTE(L)
A.MUTE(L)
FRONT(H)
A/M/S SEL
HEAD SEL
REC ST(L)
AVG FM
TO MAIN (SYSCON) (Page 4-16)
PB SPE(L)
VA SEL
AVG FM
GND
REC COLOUR
PB FM
REC FM
PB FM/COL
SP(L)
REC ST(L)
D.FF
SW 5V
C.SYNC
HEAD SEL
A/M/S SEL
COL ROT
TO PRE/REC CN501 (Page 4-51)
AL 12V
AL 5V
SW 5V
GND(A)
TO MAIN (REGULATOR) (Page 4-12)
RF VIDEO OUT
GND
peri1 V.IN
peri2 V.IN
peri1 V.OUT
peri2 V.OUT
TO MAIN (RF SW) (Page 4-25)
TU V.IN
TO MAIN (TUNER) (Page 4-24)
SERIAL DATA
SERIAL CLOCK
TO MAIN (SYSCON) (Page 4-16)
VIDEO 12V ON(L)
GND
TO MAIN (RF SW) (Page 4-25)
CN202
F.VIDEO
GND
TO JACK CN101 (Page 4-48)
1
2
3
4
5
A
B
C
D
E
F
G
H

S25354

4.10 AUDIO SCHEMATIC DIAGRAM

NOTE: For measurement of RED shaded portions, mechanism assembly with MAIN board assembly should be removed from the bottom chassis.

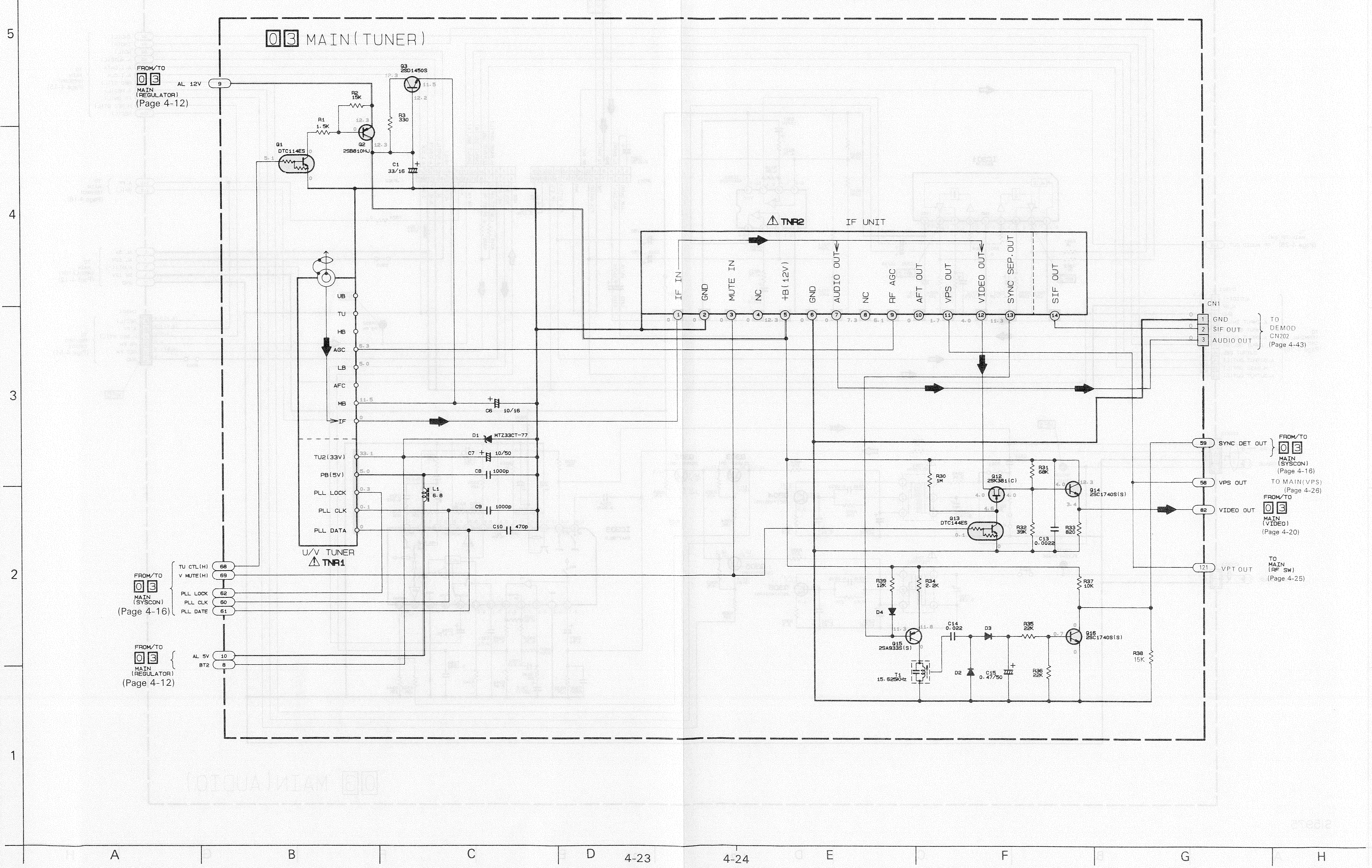

CN305
GND
TU IN(L)
TU IN(R)
TO DEMOD CN4004 (Page 4-44)
IC301
BA6138
MUTE
IC302
XRA15218
IC303
XRA7795LS
JP301
JP302
TO MAIN(RF SW) (Page 4-26)
RF AUDIO OUT
CN301
AUDIO(-)
AL5V
GND
A.INPUT IN(L)
INPUT SEL(A)
A.INPUT IN(R)
INPUT SEL(B)
OUTPUT SEL
A.OUTPUT OUT(L)
H.BASS OFF(L)
A.OUTPUT OUT(R)
TO TERMINAL CN1 (Page 4-36)
CN302
REC/PB
A.ERASE
CN303
FULL ERASE
TP333 ERASE
TP334 FLYING ERASE
T301 PELN0860
T302 PELN0861
Q303 2SA933S(QR)
Q302 2SA933S(QR)
Q304 2SC1740S(RS)
Q305 2SA933S(QR)
Q306 2SC1740S(RS)
IND(L)
IND(R)
ND(L)
A.MUTE(L)
A.I.DATA
A.I.CLK
REC ST(L)
A.REC(L)
FE ON(L)
H.REC ST(L)
REC(L)
TO MAIN (SYSCON) (Page 4-15)
A.FF
SP(L)
TO MAIN (SERVO) (Page 4-18)
AL 5V
AL 12V
AUDIO(-)
SW 12V
GND
TO MAIN (REGULATOR) (Page 4-12)
CN304
REC(L)
A.FF
H.REC ST(L)
PB FM
REC FM
GND
TO PRE/REC CN1001 (Page 4-51)
TP353 PB FM
WF1
WF2
WF3
WF5
03 MAIN(AUDIO)
5
4
3
2
1

S15975

A B C D E F G H

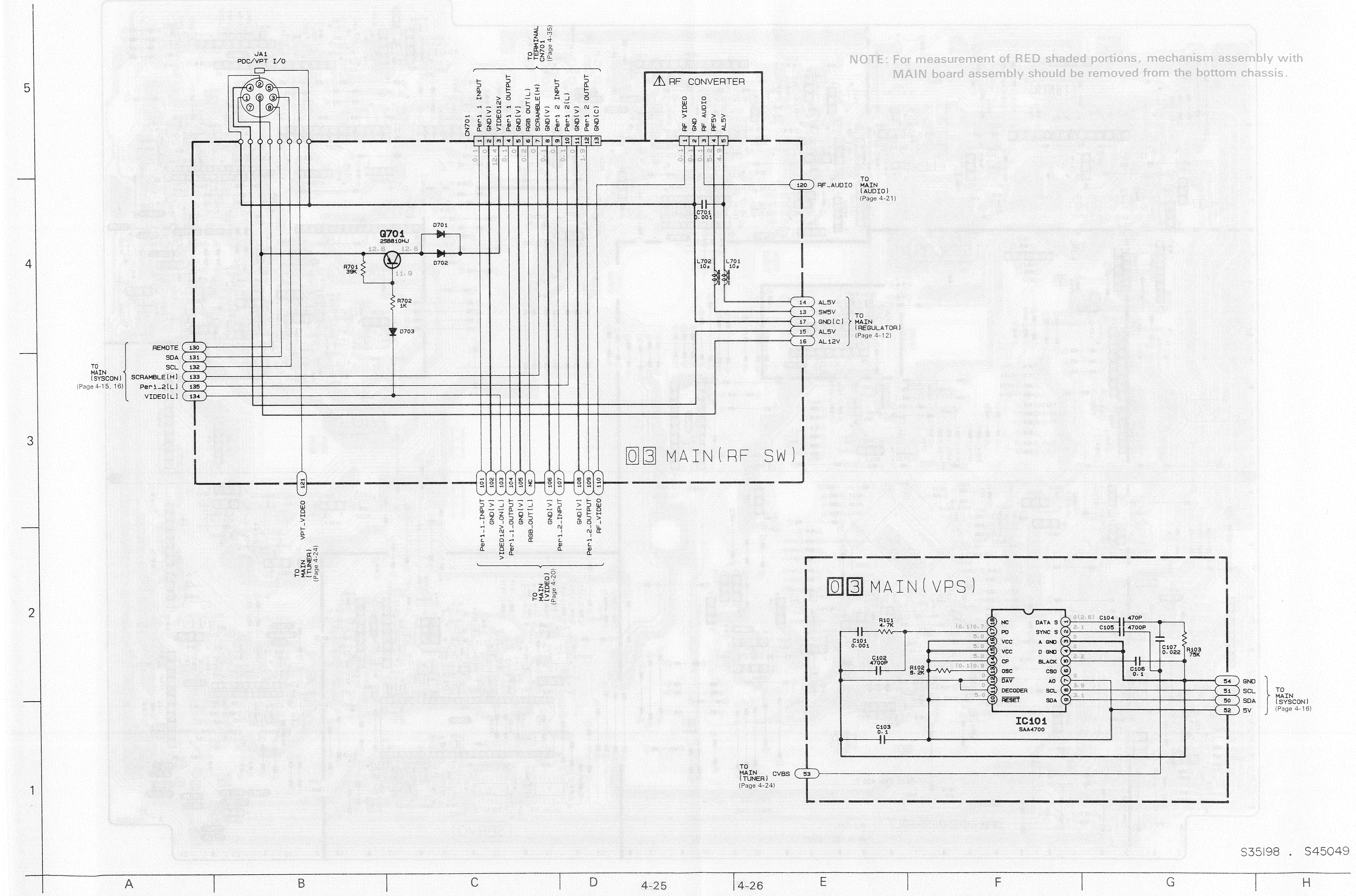
4.11 TUNER SCHEMATIC DIAGRAM

NOTE: For measurement of RED shaded portions, mechanism assembly with MAIN board assembly should be removed from the bottom chassis.


03 MAIN(TUNER)
FROM/TO
03
MAIN
(REGULATOR)
(Page 4-12)
AL 12V
9
Q3
2SD1450S
12.3
11.5
12.2
R2
15K
R3
330
R1
1.5K
12.3
0
Q2
2SB810HJ
12.3
Q1
DTC114ES
5.1
0
0
C1
33/16
UB
TU
HB
AGC
6.3
LB
5.0
AFC
MB
11.5
IF
0
C6
10/16
D1
MTZ33CT-77
TU2(33V)
33.1
C7
10/50
PB(5V)
5.0
C8
1000p
PLL LOCK
0.3
L1
6.8
PLL CLK
0.1
C9
1000p
PLL DATA
0
C10
470p
U/V TUNER
⚠ TNR1
FROM/TO
03
MAIN
(SYSCON)
(Page 4-16)
TU CTL(H)
68
V MUTE(H)
69
PLL LOCK
62
PLL CLK
60
PLL DATE
61
FROM/TO
03
MAIN
(REGULATOR)
(Page 4-12)
AL 5V
10
BT2
8
⚠ TNR2
IF UNIT
IF IN
GND
MUTE IN
NC
+B(12V)
GND
AUDIO OUT
NC
RF AGC
AFT OUT
VPS OUT
VIDEO OUT
SYNC SEP.OUT
SIF OUT
1
2
3
4
5
6
7
8
9
10
11
12
13
14
0
0
0
0
12.3
0
0
7.3
6.1
0
1.7
4.0
11.3
CN1
1 GND
2 SIF OUT
3 AUDIO OUT
0
0
0
TO
DEMOD
CN202
(Page 4-43)
R30
1M
Q12
2SK381(C)
4.0
4.0
4.6
R31
68K
4.0
12.3
Q14
2SC1740S(S)
3.4
Q13
DTC144ES
0.1
0
R32
39K
C13
0.0022
R33
820
59
SYNC DET OUT
FROM/TO
03
MAIN
(SYSCON)
(Page 4-16)
58
VPS OUT
TO MAIN(VPS)
(Page 4-26)
82
VIDEO OUT
FROM/TO
03
MAIN
(VIDEO)
(Page 4-20)
121
VPT OUT
TO
MAIN
(RF SW)
(Page 4-25)
R39
12K
R34
2.2K
R37
10K
D4
11.3
11.8
Q15
2SA933S(S)
0
C14
0.022
D3
R35
22K
0.7
0
Q16
2SC1740S(S)
0
T1
15.625KHz
D2
C15
0.47/50
R36
22K
R38
15K
5
4
3
2
1
A
B
C
D
E
F
G
H

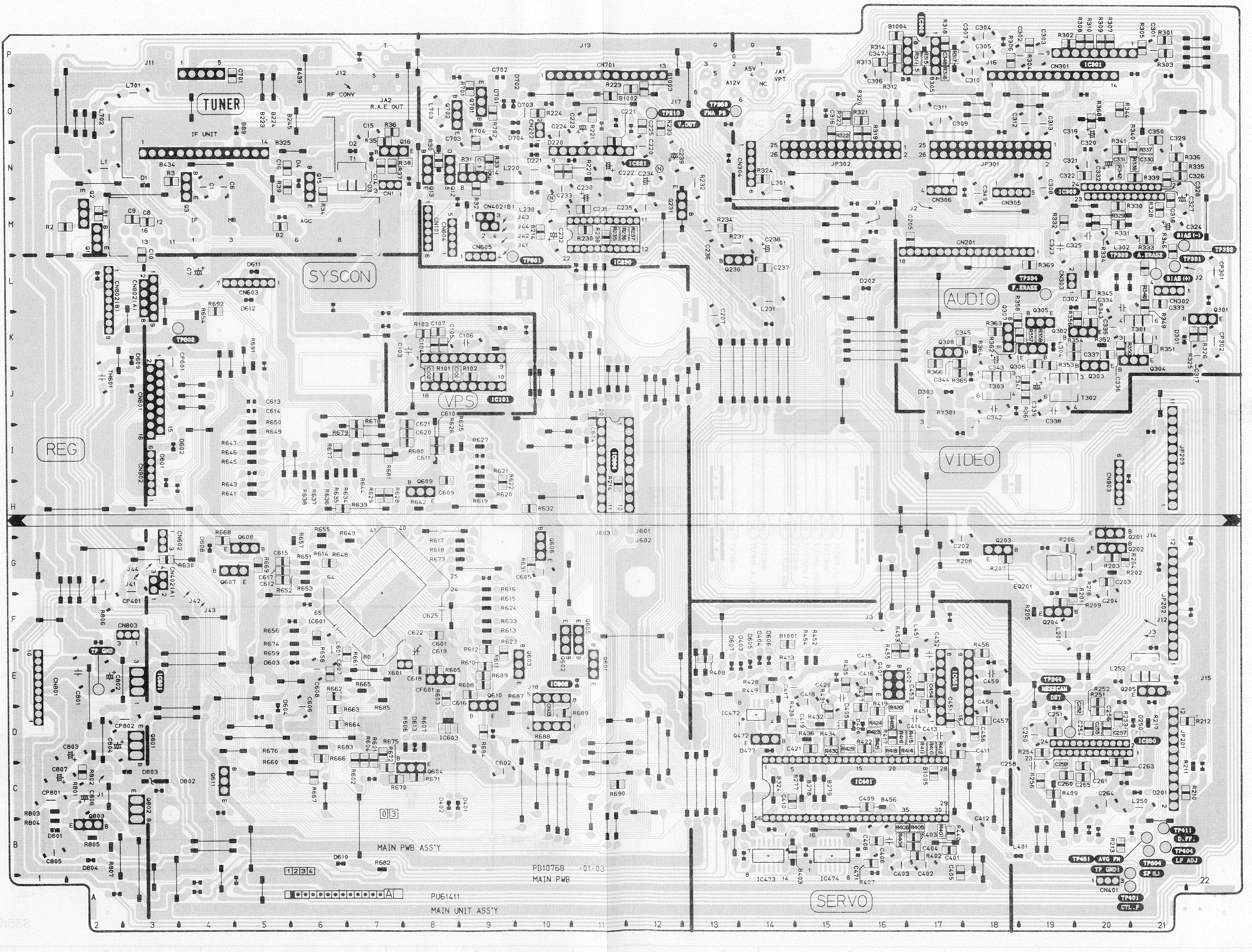
4.12 RF SW & VPS SCHEMATIC DIAGRAMS

NOTE: For measurement of RED shaded portions, mechanism assembly with MAIN board assembly should be removed from the bottom chassis.



JA1
PDC/VPT I/O
TO TERMINAL CN701 (Page 4-35)
CN701
Peri 1 INPUT
GND(V)
VIDEO12V
Peri 1 OUTPUT
GND(V)
RGB OUT(L)
SCRAMBLE(H)
GND(V)
Peri 2 INPUT
Peri 2(L)
GND(V)
Peri 2 OUTPUT
GND(C)
RF CONVERTER
RF VIDEO
GND
RF AUDIO
RF5V
AL5V
120 RF_AUDIO
TO MAIN (AUDIO) (Page 4-21)
C701 0.001
Q701 2SB810HJ
D701
D702
D703
R701 39K
R702 1K
L702 10μ
L701 10μ
14 AL5V
13 SW5V
17 GND(C)
15 AL5V
16 AL12V
TO MAIN (REGULATOR) (Page 4-12)
REMOTE 130
SDA 131
SCL 132
SCRAMBLE(H) 133
Peri_2(L) 135
VIDEO(L) 134
TO MAIN (SYSCON) (Page 4-15, 16)
03 MAIN(RF SW)
121 VPT_VIDEO
TO MAIN (TUNER) (Page 4-24)
101 Peri_1_INPUT
102 GND(V)
103 VIDEO12V_ON(L)
104 Peri_1_OUTPUT
105 GND(V)
NC RGB_OUT(L)
106 GND(V)
107 Peri_2_INPUT
108 GND(V)
109 Peri_2_OUTPUT
110 RF-VIDEO
TO MAIN (VIDEO) (Page 4-20)
03 MAIN(VPS)
IC101 SAA4700
NC
PD
VCC
VCC
CP
OSC
DAV
DECODER
RESET
DATA S
SYNC S
A GND
D GND
BLACK
CSO
AO
SCL
SDA
C101 0.001
R101 4.7K
C102 4700P
R102 8.2K
C103 0.1
C104 470P
C105 4700P
C106 0.1
C107 0.022
R103 75K
54 GND
51 SCL
50 SDA
52 5V
TO MAIN (SYSCON) (Page 4-16)
TO MAIN (TUNER) (Page 4-24)
CVBS 53
S35198 . S45049
A
B
C
D
E
F
G
H
1
2
3
4
5

4.13 MAIN CIRCUIT BOARD


TUNER
IF UNIT
SYSCON
VPS
AUDIO
VIDEO
REG
SERVO
MAIN PWB ASS'Y
PB10768 -01-03
MAIN PWB
PU61411
MAIN UNIT ASS'Y
IC101
IC201
IC221
IC230
IC301
IC308
IC401
IC601
IC603
IC801
J11
J12
J13
J14
J15
J16
J17
CN201
CN301
CN701
JP201
JP202
JP203
JP301
JP302
RF CONV
R.A.E OUT
A12V
A5V
NC
VPT
AGC
V.OUT
FMA PB
BIAS (−)
BIAS (+)
A.ERASE
F.ERASE
CTL.P
SP (L)
LP ADJ
AVG FM
D.FF
TP GND1
TP GND
MESECAM DET
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P

LEADLESS COMPONENT PARTS LOCATION GUIDE<MAIN PWB>

REF. No.	LOCATION
IC	
IC472	14D
IC473	14B
IC474	15B
IC601	7F
IC603	8D

REF. No.	LOCATION
RESISTOR	
R1	2M
R2	2M
R3	3N
R30	8N
R31	9N
R32	9N
R33	9N
R34	6N
R35	70
R36	70
R37	7N
R38	8N
R39	5N
R101	8J
R102	9J
R103	8K
R201	19F
R203	20G
R204	20G
R206	19G
R207	18G
R209	19F
R210	21C
R212	21D
R213	20B
R214	11H
R220	10N
R221	110
R222	10N
R223	120
R224	100
R230	11M
R233	120
R234	13M
R235	11M
R236	12M
R237	12M
R238	11M
R250	19D
R251	20D
R252	20D
R253	20D
R254	19D
R256	19C
R301	21P
R302	19P
R303	21P
R304	19P
R305	21P
R306	18P
R307	20P
R308	20P
R309	20P
R310	20P
R311	17P
R312	16P
R313	16P
R314	16P
R315	17P
R316	17P
R317	17P
R318	17P
R319	160
R320	160
R321	160
R322	150
R323	150
R324	14N
R325	22K
R326	22K
R328	21M
R329	20M
R330	20M
R331	20M
R332	19M
R333	21M
R334	20M
R335	21N
R336	21N
R337	21N
R338	21N
R339	21N
R340	21N
R341	20N
R342	20N
R343	20L
R344	200
R345	20L
R346	21M
R347	21L
R348	21L
R349	21L
R350	21K
R351	21K
R353	19K
R354	19K
R355	20K
R356	20K
R357	19K
R358	18K
R359	19K
R360	19K
R361	19J
R362	19K
R363	18K
R365	17K
R366	17K
R368	200
R369	19L
R401	17B
R402	17B
R403	17B
R404	16B
R405	17B
R406	16B
R407	16B
R408	13E
R409	19C
R410	17D
R411	17D
R412	17D
R413	14E
R414	17D
R415	17D
R416	16D
R417	16D
R418	16D
R419	16D
R420	16D
R421	16D
R422	10D
R423	16D
R424	16D
R425	15D
R426	16D
R427	16E
R429	15D
R430	15D
R431	15D
R434	15D
R435	15E
R438	14D
R440	17B
R449	14E
R451	17D
R453	16E
R455	16E
R456	18E
R485	16D
R601	7D
R602	7D
R603	8E
R604	7D
R605	8E
R608	9E
R609	9E
R610	9E
R611	9E
R612	9E
R622	9I
R628	7H
R929	7H
R630	3G
R631	10G
R632	10H
R639	6H
R648	6G
R658	6F
R661	6E
R662	6E
R663	6D
R664	6D
R666	6D
R667	6C
R668	4G
R669	5G
R670	7C
R671	8C
R672	7C
R675	7C
R677	6I
R678	7J
R679	7I
R680	8I
R681	7I
R684	9D
R688	10D
R689	10D
R690	11C
R701	90
R702	90
R703	9N
R801	2C

REF. No.	LOCATION
CAPACITOR	
C8	3M
C9	3M
C10	3M
C13	9N
C14	7N
C16	5N
C101	8J
C102	8J
C104	8K
C105	8K
C107	8K
C203	20G
C205	17M
C221	100
C225	120
C231	11M
C237	14L
C252	20D
C254	20D
C255	20D
C256	20D
C257	20D
C259	19C
C260	19C
C261	20C
C263	20C
C265	20C
C316	150
C318	21N
C322	20N
C326	21N
C328	21N
C330	21N
C333	21L
C336	21K
C337	20K
C340	19K
C341	19J
C344	17K
C345	18K
C347	16P
C348	17P
C350	210
C401	17B
C404	17B
C405	17A
C407	16B
C409	16C
C410	14C
C411	17C
C421	15D
C451	17D
C453	17E
C454	17E
C455	17E
C456	18E
C457	18D
C601	8F
C603	10D
C604	11J
C607	6E
C609	8I
C610	8I
C611	8I
C612	5G
C615	5G
C616	9E
C617	5G
C618	8E
C620	8I
C621	8J
C701	4P

MAIN COMPONENT PARTS LOCATION GUIDE<MAIN PWB>

REF. No.	LOCATION
IC	
IC101	9J
IC221	11N
IC230	11M
IC250	20D
IC301	19P
IC302	17P
IC303	20N
IC401	16C
IC472	14D
IC473	14B
IC474	15B
IC601	7G
IC602	10D
IC603	8D
IC604	11I
IC801	3E

REF. No.	LOCATION
TRANSISTOR	
Q1	2M
Q2	2M
Q3	4N
Q12	8N
Q13	8N
Q14	9N
Q15	6N
Q16	7N
Q201	20H
Q202	20G
Q203	18G
Q204	19F
Q230	13L
Q231	13M
Q302	20K
Q303	20K
Q304	21K
Q305	19K
Q306	19K
Q472	14D
Q601	11E
Q602	10F
Q603	10E
Q604	8C
Q605	8E
Q606	10G
Q607	4G
Q608	5G
Q609	8H
Q610	9D
Q611	4C
Q701	90
Q801	3D
Q802	3C
Q803	2B

REF. No.	LOCATION
DIODE	
D1	3N
D2	7N
D3	7N
D4	6N
D201	21C
D202	16L
D250	21D
D401	8C
D402	8C
D403	14E
D477	14D
D603	5E
D604	5D
D605	14E
D606	14E
D607	13E
D608	4G
D609	3K
D610	6B
D613	8D
D701	90
D702	90
D703	90
D801	1B
D802	3C
D803	3C
D804	2B

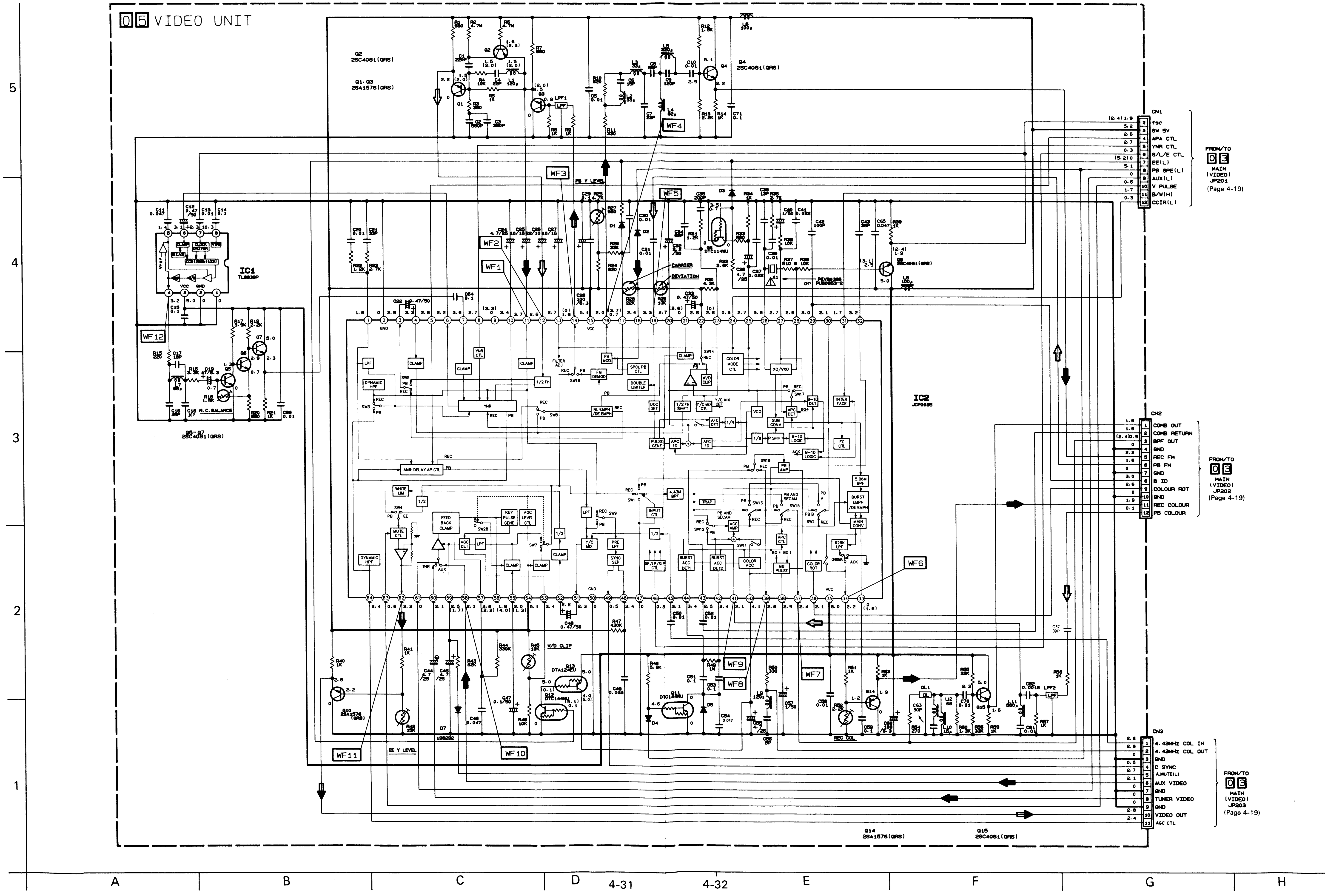
REF. No.	LOCATION
CONNECTOR	
CN1	7N
CN201	18M
CN202	100
CN301	19P
CN302	21L
CN303	19L
CN304	14N
CN305	18N
CN401	20A
CN402	3G
CN601	3J
CN602	3G
CN603	5L
CN604	8M
CN701	11P
CN802	3L

REF. No.	LOCATION
CP	
CP401	3F
CP601	4K
CP801	1C
CP802	3D

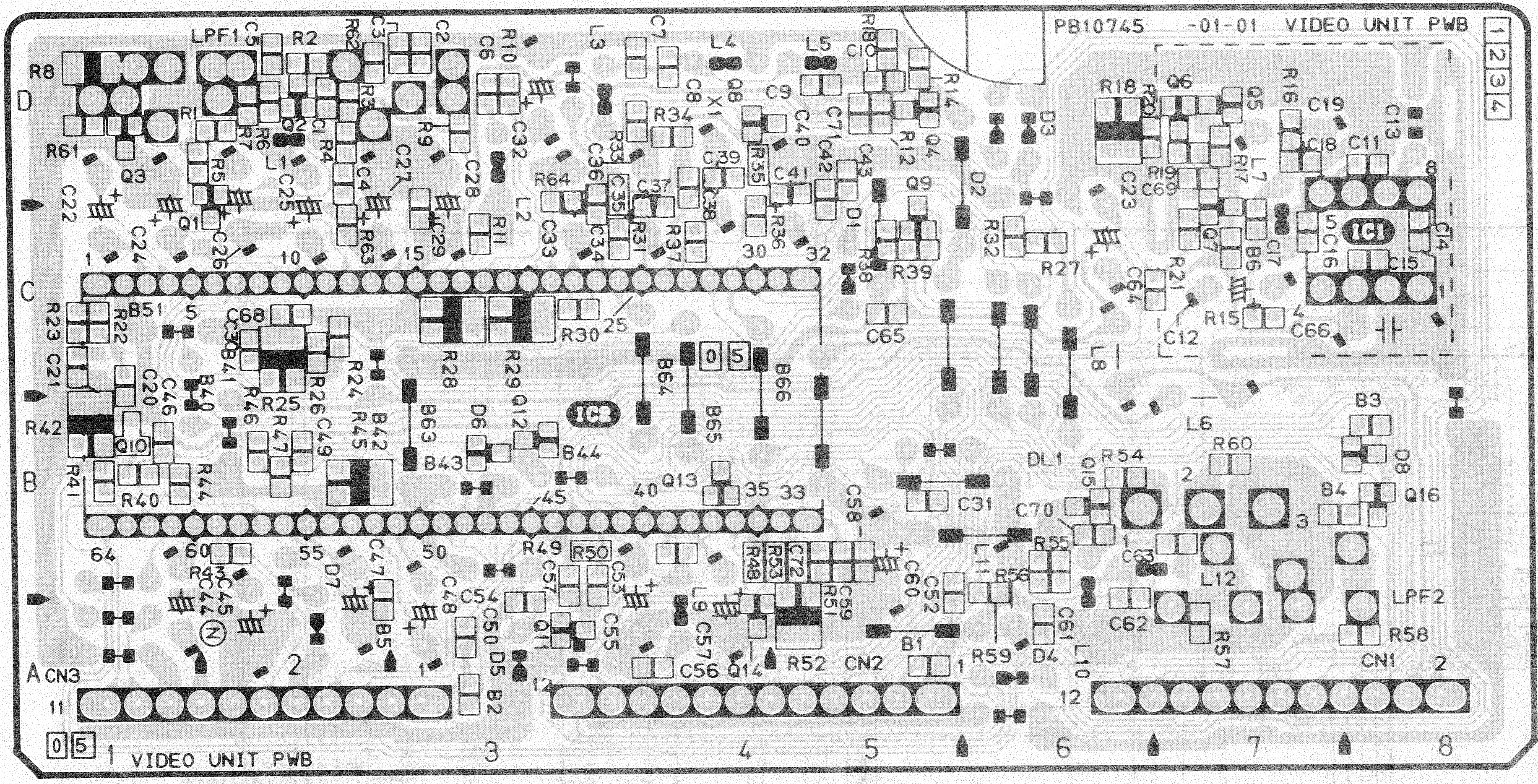
REF. No.	LOCATION
TEST POINT	
TP210	120
TP244	19D
TP333	21L
TP334	19L
TP353	140
TP401	20A
TP451	21B

REF. No.	LOCATION
ADJUSTMENT	
L252	21E
C619	8E

4.14 VIDEO UNIT SCHEMATIC DIAGRAM


05 VIDEO UNIT
Q2 2SC4081(QRS)
Q1, Q3 2SA1576(QRS)
Q4 2SC4081(QRS)
Q5–Q7 2SC4081(QRS)
Q8 2SC4081(QRS)
Q9 DTC114WU
Q10 2SA1576(QRS)
Q11 DTC144WU
Q12 DTC144WU
Q13 DTA124EU
Q14 2SA1576(QRS)
Q15 2SC4081(QRS)
IC1 TL8839P
IC2 JCP0035
D7 1SS292
LPF1
LPF2
DL1
X1
PB Y LEVEL
CARRIER
DEVIATION
W/D CLIP
EE Y LEVEL
REC COL
N.C. BALANCE
WF1
WF2
WF3
WF4
WF5
WF6
WF7
WF8
WF9
WF10
WF11
WF12
CN1
(2.4) 1.9 — 2 fsc
5.2 — 3 SW 5V
2.6 — 4 APA CTL
2.7 — 5 YNR CTL
0.3 — 6 S/L/E CTL
(5.2) 0 — 7 EE(L)
5.1 — 8 PB SPE(L)
0 — 9 AUX(L)
0.6 — 10 V PULSE
1.7 — 11 B/W(H)
0.3 — 12 CCIR(L)
FROM/TO 03 MAIN (VIDEO) JP201 (Page 4-19)
CN2
1.6 — 1 COMB OUT
1.6 — 2 COMB RETURN
(2.4) 0.9 — 3 BPF OUT
0 — 4 GND
2.2 — 5 REC FM
1.6 — 6 PB FM
0 — 7 GND
3.0 — 8 B ID
2.6 — 9 COLOUR ROT
0 — 10 GND
1.9 — 11 REC COLOUR
0.1 — 12 PB COLOUR
FROM/TO 03 MAIN (VIDEO) JP202 (Page 4-19)
CN3
2.8 — 1 4.43MHz COL IN
2.8 — 2 4.43MHz COL OUT
0 — 3 GND
0.5 — 4 C SYNC
2.7 — 5 A.MUTE(L)
2.1 — 6 AUX VIDEO
0 — 7 GND
0 — 8 TUNER VIDEO
0 — 9 GND
2.8 — 10 VIDEO OUT
2.4 — 11 AGC CTL
FROM/TO 03 MAIN (VIDEO) JP203 (Page 4-19)
1
2
3
4
5
A
B
C
D
E
F
G
H

4.15 VIDEO UNIT CIRCUIT BOARD


PB10745 -01-01 VIDEO UNIT PWB
1 VIDEO UNIT PWB
05
1
2
3
4
1
3
4
5
6
7
8
A
B
C
D
LPF1
LPF2
IC1
IC2
DL1
CN1
CN2
CN3
L1
L2
L3
L4
L5
L6
L7
L8
L9
L10
L11
L12
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q12
Q13
Q14
Q15
Q16
D1
D2
D3
D4
D5
D6
D7
D8
B1
B2
B3
B4
B5
B6
B40
B41
B42
B43
B44
B51
B63
B64
B65
B66
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R14
R15
R16
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R63
R64
C1
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C60
C61
C62
C63
C64
C65
C66
C68
C69
C70
C71
C72
X1

LEADLESS COMPONENT PARTS LOCATION GUIDE

<VIDEO UNIT PWB>

REF No.	LOCATION
TRANSISTOR	
Q1	1C
Q2	2D
Q3	1D
Q4	5D
Q5	7D
Q6	7D
Q7	7C
Q8	4D
Q9	5C
Q10	1B
Q11	3A
Q12	3B
Q13	4B
Q14	4A
Q15	6B
Q16	8B

REF No.	LOCATION
DIODE	
D6	3B
D8	8B

REF No.	LOCATION
RESISTOR	
R1	2D
R2	2D
R3	2D
R4	2D
R5	1D
R6	2D
R7	2D
R8	1D
R9	3D
R10	3D
R11	3C
R12	5D
R13	5D
R14	5D
R15	7C
R16	7D
R17	7D
R18	5D
R19	7D
R20	7D
R21	7C
R22	1C
R23	1C
R24	2C
R26	2C
R27	6C
R30	4C
R31	4C
R32	6C
R33	4D
R34	4D
R35	4D
R36	4C

REF No.	LOCATION
RESISTOR	
R37	4C
R38	5C
R39	5C
R40	1B
R41	1B
R43	2B
R44	1B
R46	2B
R47	2B
R48	4B
R49	4B
R50	4B
R51	5B
R53	5B
R54	6B
R55	6B
R56	6B
R57	7A
R58	8A
R59	6A
R60	7B
R61	1D
R62	2D
R63	2C
R64	3D

REF No.	LOCATION
CAPACITOR	
C1	2D
C2	3D
C3	3D
C4	2D
C5	2D
C6	3D
C7	4D
C8	4D
C9	5D
C10	5D
C11	7D
C14	8C
C15	8C
C16	7C
C17	7C
C18	7D
C20	1C
C21	1C
C29	3C
C30	2C
C31	5B
C34	4C
C35	4D
C37	4C
C38	4D
C39	4D
C41	5D
C42	5D
C43	5D

REF No.	LOCATION
CAPACITOR	
C46	1B
C49	2B
C50	3A
C51	3B
C52	5A
C53	4B
C54	3A
C56	4A
C58	5B
C59	5B
C61	6A
C62	6A
C63	7B
C64	7C
C65	5C
C68	2C
C69	7D
C70	6B
C71	5D
C72	5B

REF No.	LOCATION
ADJUSTMENTS	
R18	6D
R25	2C
R28	3C
R29	3C
R42	1B
R45	2B
R52	5A

MAIN COMPONENT PARTS LOCATION GUIDE

<VIDEO UNIT PWB>

REF No.	LOCATION
DIODE	
IC1	8C
IC2	3B

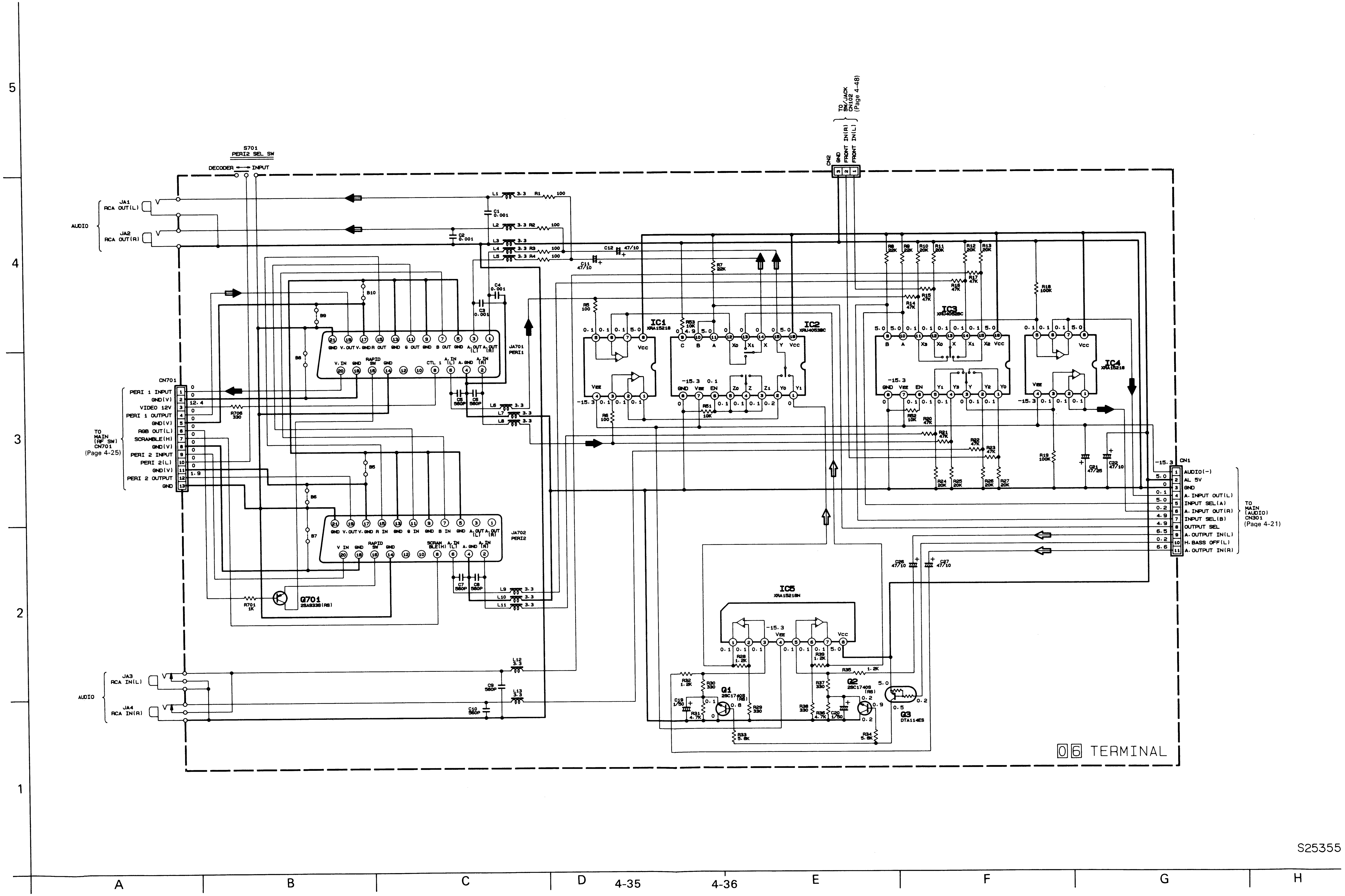
REF No.	LOCATION
TRANSISTOR	
Q1	2C
Q2	2D
Q3	1D
Q4	5D
Q5	7D
Q6	7D
Q7	7C
Q8	4D
Q9	5C
Q10	1B
Q11	3A
Q12	3B
Q13	4B
Q14	4A
Q15	6B

REF No.	LOCATION
DIODE	
D1	5C
D2	6D
D3	6D
D4	6A
D5	3A
D7	2B

REF No.	LOCATION
CONNECTOR	
CN1	7A
CN2	4A
CN3	2A

REF No.	LOCATION
ADJUSTMENT	
R18	6D
R25	2C
R28	3C
R29	3C
R42	1B
R45	2B
R52	5A

4.16 TERMINAL SCHEMATIC DIAGRAM



S701
PERI2 SEL SW
DECODER
INPUT
AUDIO
JA1 RCA OUT(L)
JA2 RCA OUT(R)
JA3 RCA IN(L)
JA4 RCA IN(R)
CN701
PERI 1 INPUT
GND(V)
VIDEO 12V
PERI 1 OUTPUT
GND(V)
RGB OUT(L)
SCRAMBLE(H)
GND(V)
PERI 2 INPUT
PERI 2(L)
GND(V)
PERI 2 OUTPUT
GND
TO MAIN (RF SW) CN701 (Page 4-25)
JA701 PERI1
JA702 PERI2
Q701 2SA933S(RS)
R701 1K
R706 330
IC1 XRA15218
IC2 XRU4053BC
IC3 XRU4052BC
IC4 XRA15218
IC5 XRA15218N
Q1 2SC1740S (RS)
Q2 2SC1740S (RS)
Q3 DTA114ES
CN2
GND
FRONT IN(R)
FRONT IN(L)
TO SW/JACK CN102 (Page 4-48)
CN1
AUDIO(-)
AL 5V
GND
A. INPUT OUT(L)
INPUT SEL(A)
A. INPUT OUT(R)
INPUT SEL(B)
OUTPUT SEL
A. OUTPUT IN(L)
H. BASS OFF(L)
A. OUTPUT IN(R)
TO MAIN (AUDIO) CN301 (Page 4-21)
06 TERMINAL
1
2
3
4
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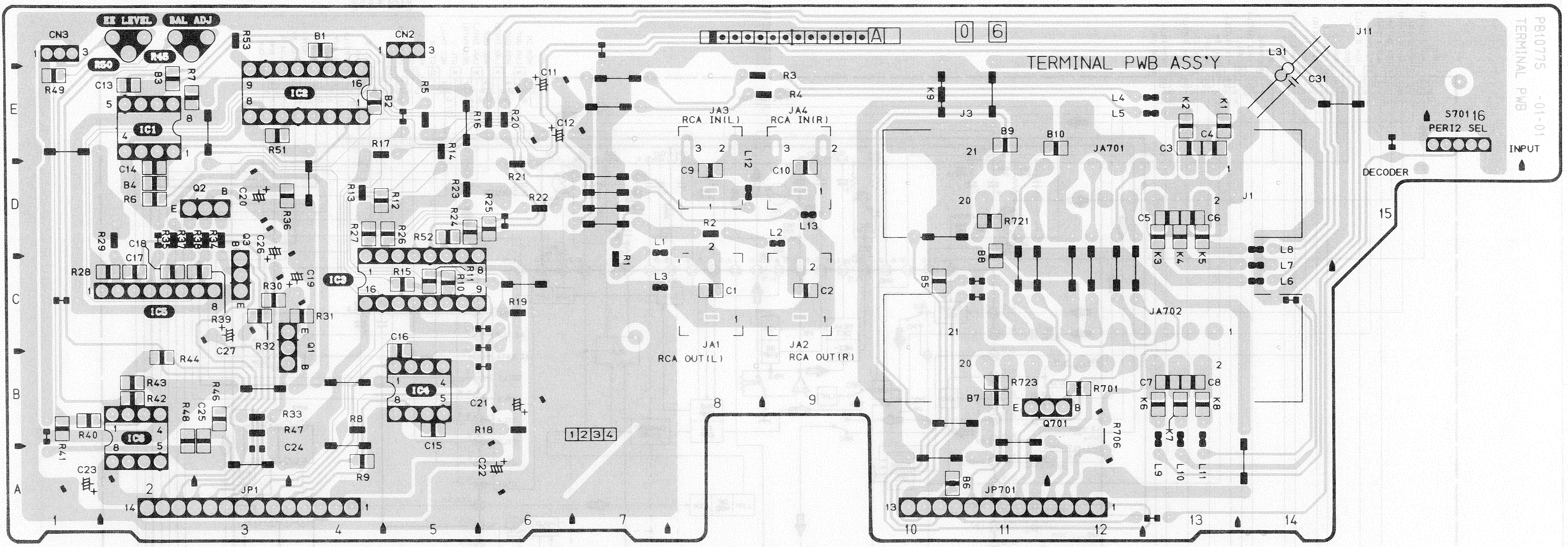
A
B
C
D
E
F
G
H

S25355

4.17 TERMINAL CIRCUIT BOARD


TERMINAL PWB ASS'Y
PB10775 -01-01
TERMINAL PWB
SX LEVEL
BAL ADJ
CN3
CN2
IC1
IC2
IC3
IC4
IC5
Q1
Q2
Q3
Q701
JA3 RCA IN(L)
JA4 RCA IN(R)
JA1 RCA OUT(L)
JA2 RCA OUT(R)
JA701
JA702
J1
J3
J11
L31
C31
S701
PERI2 SEL
INPUT
DECODER
JP1
JP701
A
B
C
D
E
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

LEADLESS COMPONENT PARTS
LOCATION GUIDE<TERMINAL PWB>

REF. No.	LOCATION
RESISTOR	
R6	2D
R7	2E
R9	4A
R10	5C
R11	5C
R12	4D
R15	5C
R24	5D
R25	6D
R26	5D
R27	4D
R28	2C
R30	3C
R31	4C
R32	3C
R36	3D
R40	1B
R41	1B
R42	2B
R43	2B
R44	2B
R46	3B
R48	2B
R49	1E
R51	3E
R52	5D
R701	12B
R721	11D
R723	11B

REF. No.	LOCATION
CAPACITOR	
C1	8C
C2	9C
C3	13E
C4	13E
C5	13D
C6	13D
C7	13B
C8	13B
C9	8D
C10	9D
C13	2E
C14	2D
C15	5B
C16	5C
C17	2C
C18	2C
C25	3B
C39	3C

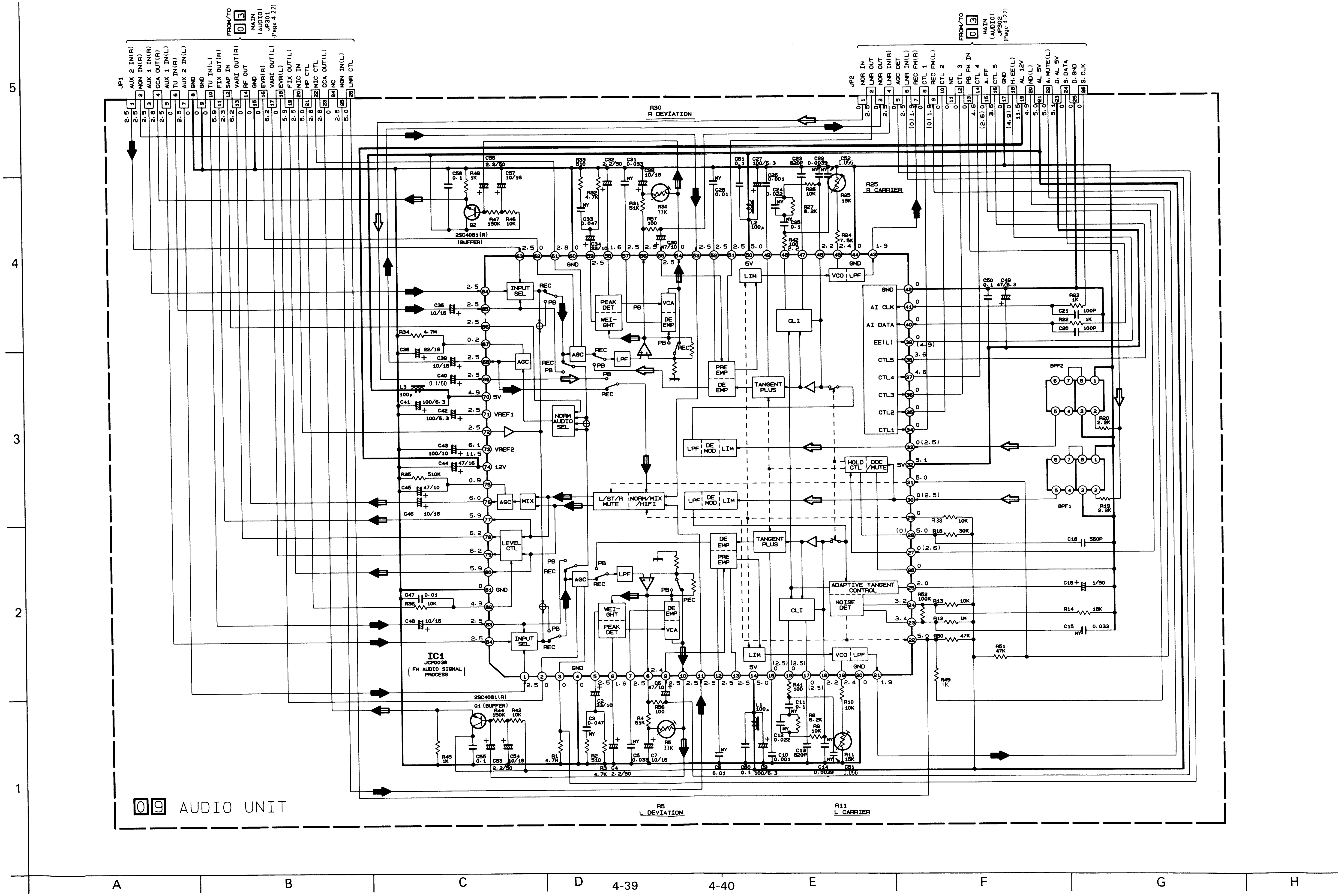
MAIN COMPONENT PARTS
LOCATION GUIDE<TERMINAL PWB>

REF. No.	LOCATION
IC	
IC1	2E
IC2	4E
IC3	5C
IC4	5B
IC5	2C

REF. No.	LOCATION
TRANSISTOR	
Q1	3C
Q2	3D
Q3	3C
Q701	12B

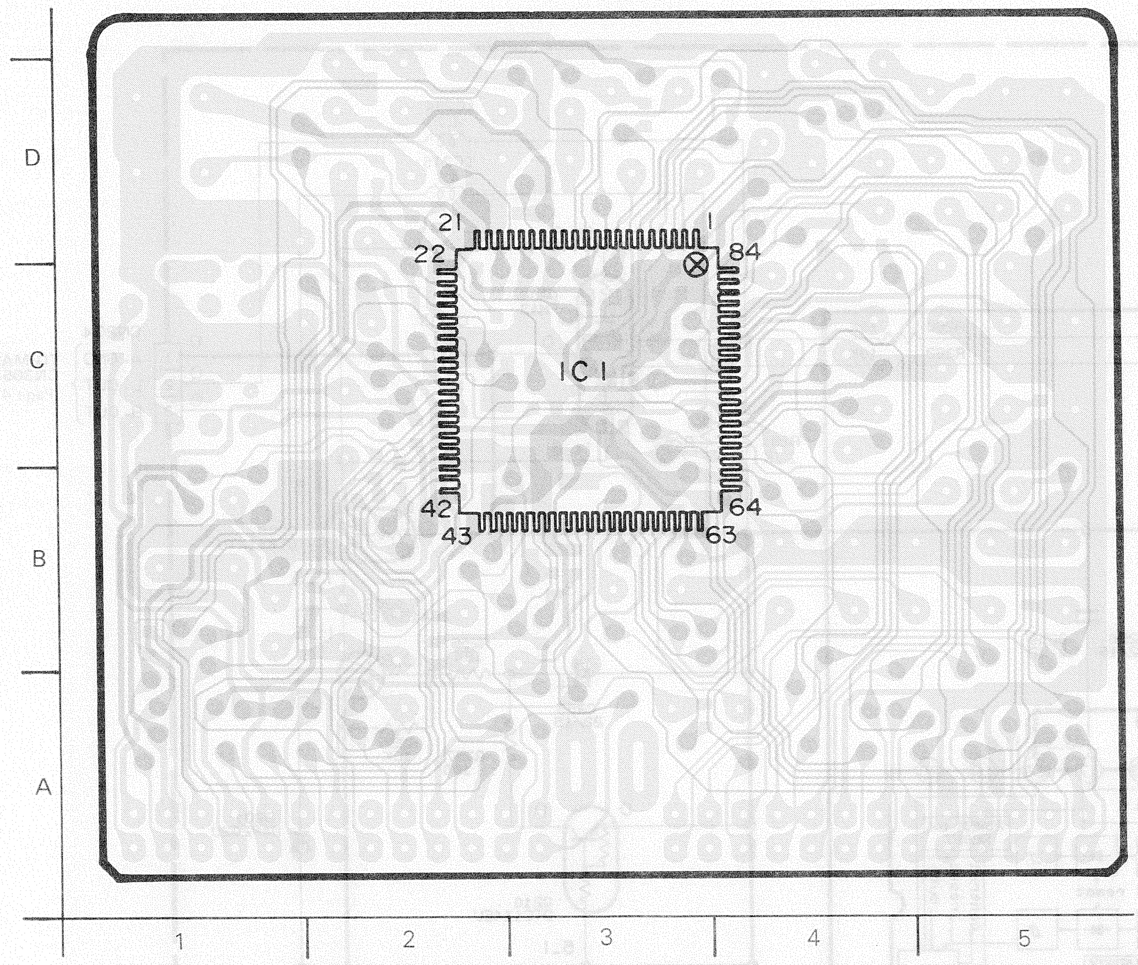
REF. No.	LOCATION
CONNECTOR	
CN1	3A
CN2	5F
CN701	11A

4.18 AUDIO UNIT SCHEMATIC DIAGRAM

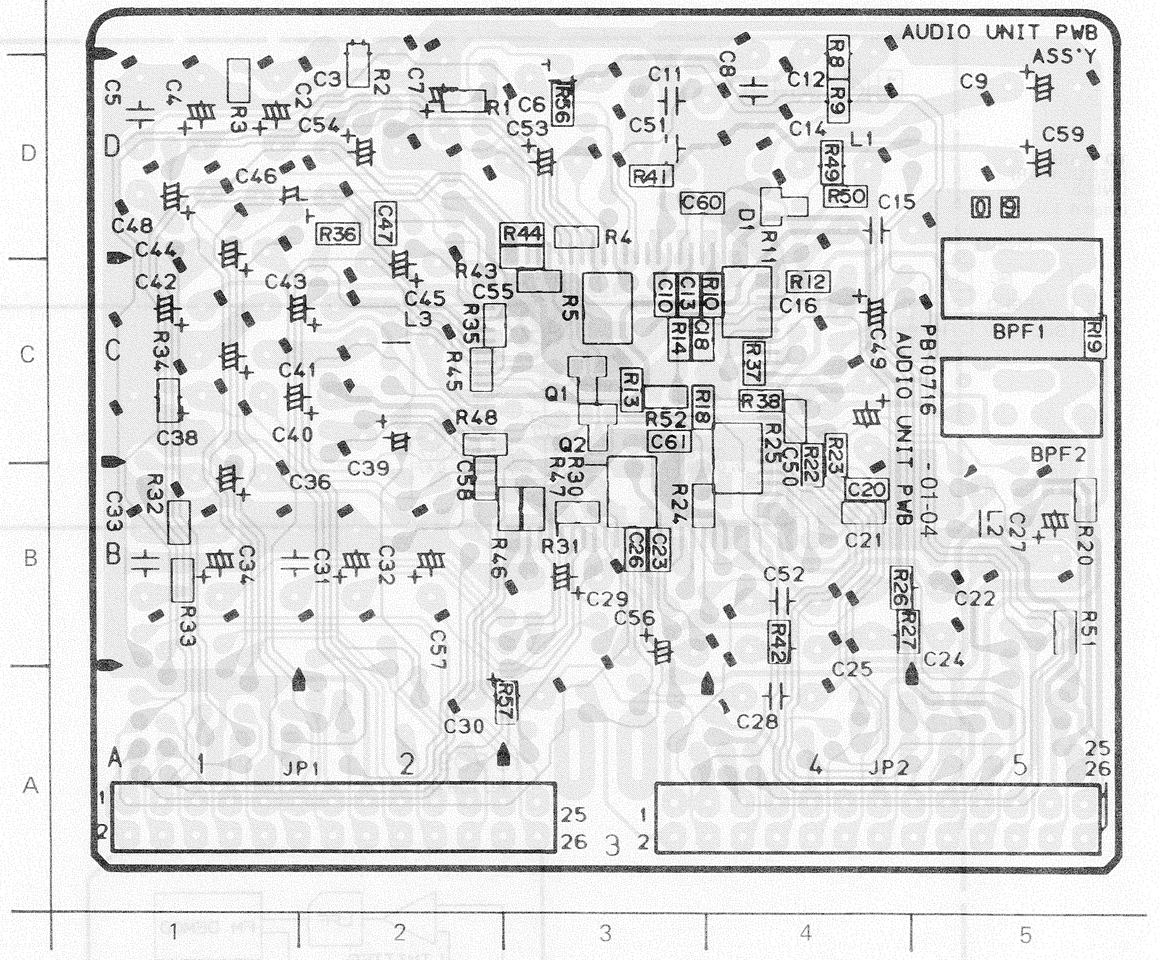

FROM/TO 03 MAIN (AUDIO) JP301 (Page 4-22)
JP1
1 AUX 2 IN(R) 2.5
2 MON IN(R) 2.5
3 AUX 1 IN(R) 2.5
4 CCA OUT(R) 2.8
5 AUX 1 IN(L) 2.5
6 TU IN(R) 0
7 AUX 2 IN(L) 2.5
8 GND 0
9 GND 0
10 TU IN(L) 0
11 FIX OUT(R) 5.9
12 SAP IN 2.3
13 VARI OUT(R) 6.2
14 RF OUT 0
15 GND 0
16 EVR(R) 0
17 VARI OUT(L) 6.2
18 EVR(L) 0
19 FIX OUT(L) 5.9
20 MIC IN 2.5
21 HP CTL 5.0
22 MIC CTL 2.8
23 CCA OUT(L) 2.8
24 NC 0
25 MON IN(L) 2.5
26 LNR CTL 5.0
FROM/TO 03 MAIN (AUDIO) JP302 (Page 4-22)
JP2
1 NOR IN 0
2 LNR OUT 2.5
3 NOR OUT 0
4 LNR IN(R) 2.5
5 AGC DET 0
6 LNR IN(L) 2.5
7 REC FM(R) (0) 1.9
8 CTL 1 0
9 REC FM(L) (0) 1.9
10 CTL 2 0
11 NC 0
12 CTL 3 0
13 PB FM IN 0
14 CTL 4 4.6
15 A.FF (2.6) 0
16 CTL 5 3.6
17 GND 0
18 H.EE(L) (4.9) 0
19 AL 12V 11.5
20 ND(L) 4.9
21 AL 5V 5.0
22 A.MUTE(L) 5.0
23 D.AL 5V 5.1
24 S.DATA 0
25 D.GND 0
26 S.CLK 0
R30 R DEVIATION
R25 R CARRIER
R5 L DEVIATION
R11 L CARRIER
Q2 2SC4081(R) (BUFFER)
Q1 2SC4081(R) (BUFFER)
IC1 JCP0036 (FM AUDIO SIGNAL PROCESS)
INPUT SEL
AGC
MIX
LEVEL CTL
NORM AUDIO SEL
VREF1
VREF2
5V
12V
GND
REC
PB
PEAK DET
WEI-GHT
VCA
DE EMP
LPF
PRE EMP
TANGENT PLUS
LIM
CLI
VCO
L/ST/R MUTE
NORM/MIX /HIFI
LPF DE MOD LIM
HOLD CTL
DOC /MUTE
ADAPTIVE TANGENT CONTROL
NOISE DET
AI CLK
AI DATA
EE(L)
CTL5
CTL4
CTL3
CTL2
CTL1
BPF1
BPF2
C56 2.2/50
C58 0.1
R48 1K
C57 10/16
R47 150K
R46 10K
R33 510
R32 4.7K
C33 0.047
C34 33/10
C32 2.2/50
C31 0.033
C29 10/16
R31 51K
R30 33K
R57 100
C30 47/10
C28 0.01
C51 0.1
C27 100/6.3
L2 100μ
C26 0.001
C24 0.022
C23 820P
C22 0.0039
R26 10K
R27 8.2K
C25 0.1
R42 100
C52 0.056
R25 15K
R24 7.5K
R34 4.7M
C38 22/16
C39 10/16
C40 0.1/50
L3 100μ
C41 100/6.3
C42 100/6.3
C36 10/16
C43 100/10
C44 47/16
R35 510K
C45 47/10
C46 10/16
C47 0.01
R36 10K
C48 10/16
C50 0.1
C49 47/6.3
R23 1K
C21 100P
R22 1K
C20 100P
R20 2.2K
R19 2.2K
R38 10K
R18 30K
C18 560P
C16 1/50
R52 100K
R13 10K
R12 1M
R14 18K
C15 0.033
R50 47K
R51 47K
R49 1K
R44 150K
R43 10K
R45 1K
C55 0.1
C53 2.2/50
C54 10/16
R1 4.7M
R2 510
R3 4.7K
C4 2.2/50
C2 33/10
C3 0.047
R4 51K
R56 100
C6 47/10
R5 33K
C5 0.033
C7 10/16
C8 0.01
C60 0.1
C9 100/6.3
L1 100μ
C11 0.1
C12 0.022
C10 0.001
R41 100
R8 8.2K
R9 10K
C13 820P
C14 0.0039
R10 10K
R11 15K
C51 0.056
MY
09 AUDIO UNIT
5
4
3
2
1
A
B
C
D
E
F
G
H

4.19 AUDIO UNIT CIRCUIT BOARD

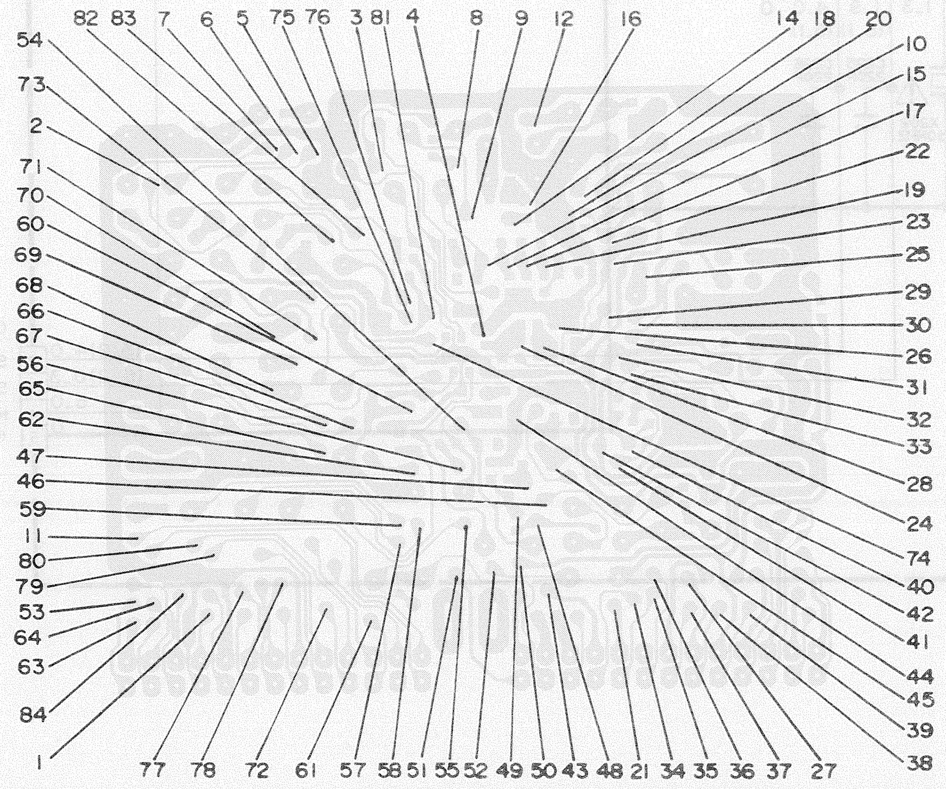
— COMPONENT SIDE —
(A)


D
C
B
A
21
1
22
84
IC1
42
64
43
63
1
2
3
4
5

— FOIL SIDE —
(B)


AUDIO UNIT PWB ASS'Y
PB10716 - 01-04
AUDIO UNIT PWB
D
C
B
A
C5
C4
C3
R2
C7
R1
C6
R56
C11
C8
C12
R8
R9
C9
C2
R3
C54
C53
C51
C14
L1
C59
C46
R41
R49
C60
D1
R50
C15
C48
C44
R36
C47
R44
R4
R11
C42
C43
R43
C55
C10
C13
C18
R10
R12
C16
BPF1
R19
L3
C45
R35
R5
R14
R34
C41
R45
Q1
R13
R37
C49
R52
R18
R38
C38
C40
R48
C61
R25
R23
BPF2
Q2
R22
R47
R30
C50
R32
C36
C39
C58
R24
C20
C21
L2
C27
R20
C33
C34
C31
C32
R46
R31
C26
C23
C29
C52
R26
C22
R33
C56
R42
R27
R51
C57
C24
C25
R57
C28
C30
A
1
JP1
2
3
4
JP2
5
25
26
1
2
25
26
1
2
1
2
3
4
5

— IC PIN NUMBER LOCATION (FOIL SIDE) —


82
83
7
6
5
75
76
3
81
4
8
9
12
16
14
18
20
54
73
2
71
70
60
69
68
66
67
56
65
62
47
46
59
11
80
79
53
64
63
84
1
10
15
17
22
19
23
25
29
30
26
31
32
33
28
24
74
40
42
41
44
45
39
38
77
78
72
61
57
58
51
55
52
49
50
43
48
21
34
35
36
37
27

LEADLESS COMPONENT PARTS LOCATION GUIDE
<AUDIO UNIT PWB>

REF. No.	LOCATION
TRANSISTOR	
Q1	B-3C
Q2	B-3C

REF. No.	LOCATION
DIODE	
D1	B-4D

REF. No.	LOCATION
RESISTOR	
R1	B-2D
R2	B-2D
R3	B-1D
R4	B-3D
R5	B-3C
R8	B-4D
R9	B-4D
R10	B-4C
R11	B-4C
R12	B-4C
R13	B-3C
R14	B-3C
R18	B-3C
R19	B-5C
R20	B-5B

REF. No.	LOCATION
RESISTOR	
R22	B-4B
R23	B-4B
R24	B-3B
R25	B-4C
R26	B-4B
R27	B-4B
R30	B-3B
R31	B-3B
R32	B-1B
R33	B-1B
R34	B-1C
R35	B-2C
R36	B-2D
R37	B-4C
R38	B-4C

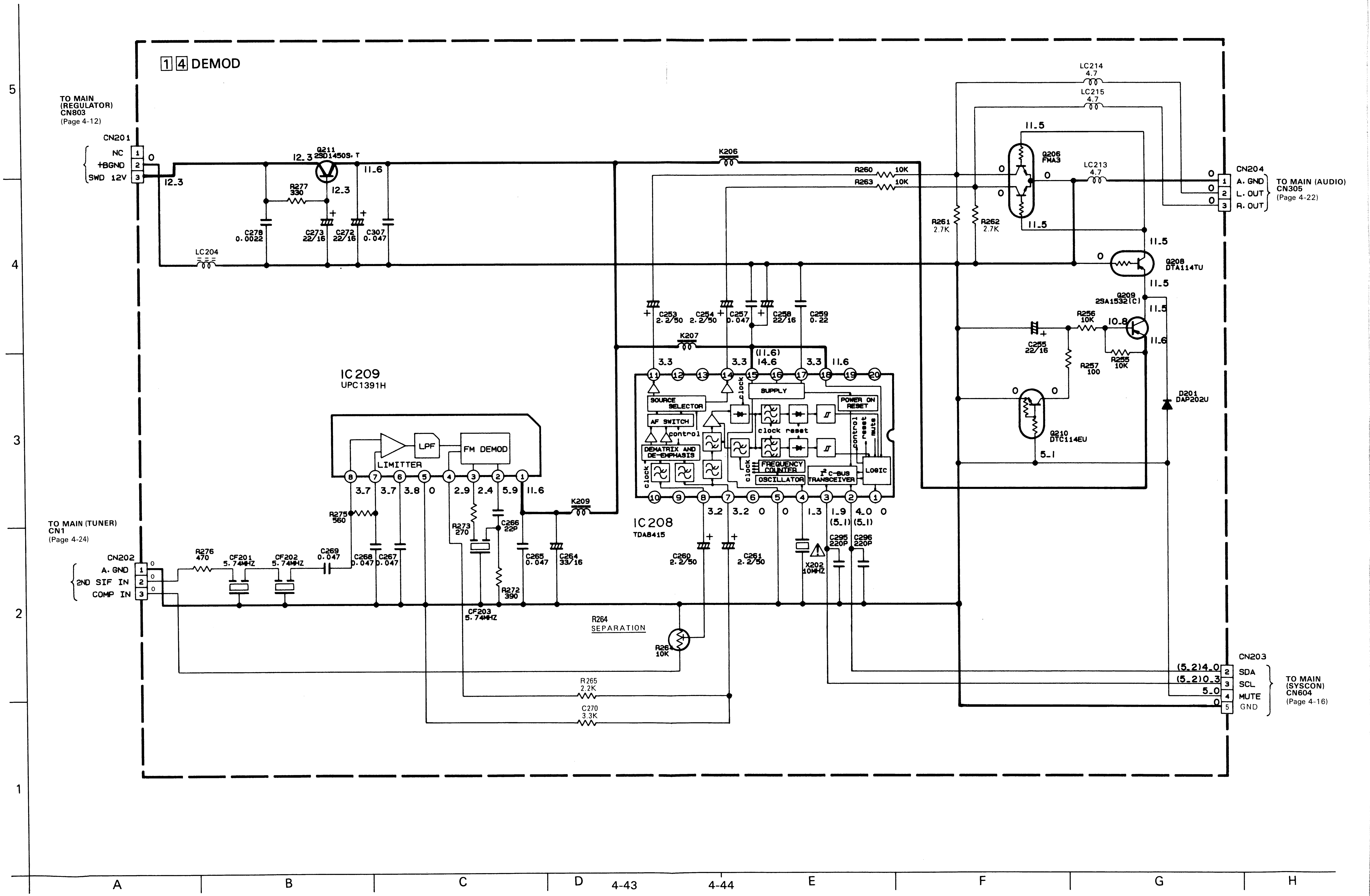
REF. No.	LOCATION
RESISTOR	
R41	B-3D
R42	B-4B
R43	B-2C
R44	B-3D
R45	B-2C
R46	B-3B
R47	B-3B
R48	B-2C
R49	B-4D
R50	B-4D
R51	B-5B
R52	B-3C
R56	B-3D
R57	B-3A

REF. No.	LOCATION
CAPACITOR	
C10	B-3C
C13	B-3C
C18	B-3C
C20	B-4B
C21	B-4B
C23	B-3B
C26	B-3B
C47	B-2D
C50	B-4C
C58	B-2B
C60	B-3D
C61	B-3C

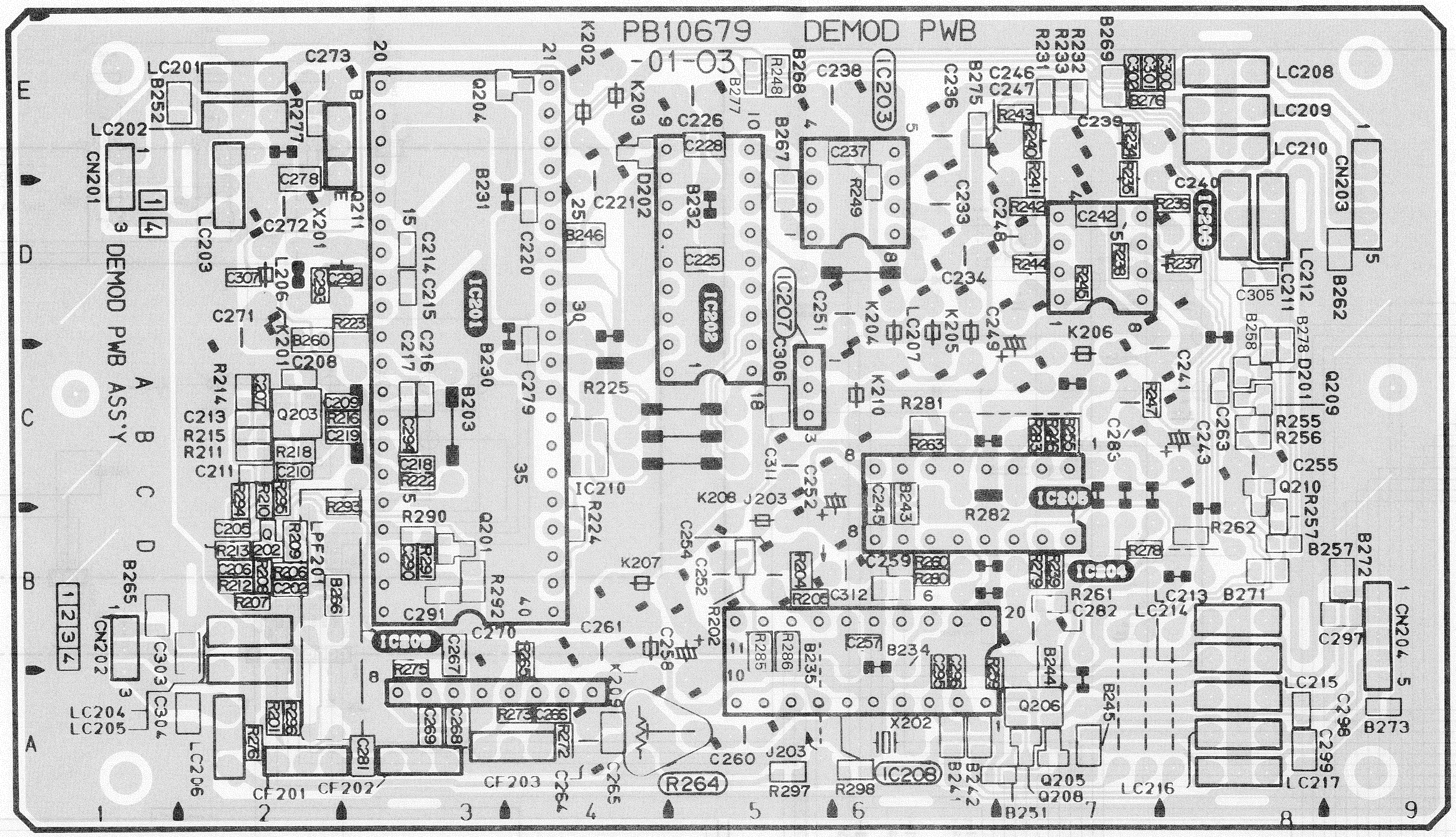
MAIN COMPONENT PARTS LOCATION GUIDE
<AUDIO UNIT PWB>

REF. No.	LOCATION
IC	
IC1	A-3C
TRANSISTOR	
Q1	B-3C
Q2	B-3C
DIODE	
D1	B-4D
CONNECTOR	
JP1	B-2A
JP2	B-4A
ADJUSTMENT	
R5	B-3C
R11	B-4C
R25	B-3B
R30	B-3B

4.20 DEMODULATOR SCHEMATIC DIAGRAM


14 DEMOD
TO MAIN (REGULATOR) CN803 (Page 4-12)
CN201
NC
+BGND
SWD 12V
Q211 2SD1450S.T
R277 330
C278 0.0022
C273 22/16
C272 22/16
C307 0.047
LC204
K206
R260 10K
R263 10K
LC214 4.7
LC215 4.7
LC213 4.7
Q206 FMA3
R261 2.7K
R262 2.7K
Q208 DTA114TU
Q209 2SA1532(C)
R256 10K
R255 10K
R257 100
C255 22/16
Q210 DTC114EU
D201 DAP202U
CN204
A. GND
L. OUT
R. OUT
TO MAIN (AUDIO) CN305 (Page 4-22)
C253 2.2/50
C254 2.2/50
C257 0.047
C258 22/16
C259 0.22
K207
IC209 UPC1391H
LPF
FM DEMOD
LIMITTER
IC208 TDA8415
SOURCE SELECTOR
AF SWITCH
control
DEMATRIX AND DE-EMPHASIS
SUPPLY
POWER ON RESET
clock
reset
mute
FREQUENCY COUNTER
OSCILLATOR
I²C-BUS TRANSCEIVER
LOGIC
K209
TO MAIN (TUNER) CN1 (Page 4-24)
CN202
A. GND
2ND SIF IN
COMP IN
R276 470
CF201 5.74MHZ
CF202 5.74MHZ
C269 0.047
C268 0.047
C267 0.047
R275 560
R273 270
C266 22P
R272 390
CF203 5.74MHZ
C265 0.047
C264 33/16
C260 2.2/50
C261 2.2/50
X202 10MHZ
C295 220P
C296 220P
R264 SEPARATION
R264 10K
R265 2.2K
C270 3.3K
CN203
SDA
SCL
MUTE
GND
TO MAIN (SYSCON) CN604 (Page 4-16)
(5.2)4.0
(5.2)0.3
5.0
A
B
C
D
E
F
G
H
1
2
3
4
5

4.21 DEMODULATOR CIRCUIT BOARD


PB10679 DEMOD PWB
-01-03
DEMOD PWB ASS'Y
A B C D
E
D
C
B
A
1
2
3
4
5
6
7
8
9
IC201
IC202
IC203
IC204
IC205
IC206
IC207
IC208
IC209
IC210
CN201
CN202
CN203
CN204
LC201
LC202
LC203
LC204
LC205
LC206
LC207
LC208
LC209
LC210
LC211
LC212
LC213
LC214
LC215
LC216
LC217
LPF201
CF201
CF202
CF203
X201
X202
J203
R264

LEADLESS COMPONENT PARTS LOCATION GUIDE <DEMODULATOR PWB>

REF No.	LOCATION
TRANSISTOR	
Q201	3B
Q202	2B
Q203	2C
Q204	4E
Q205	7A
Q206	7A
Q208	7A
Q209	8C
Q210	8C
DIODE	
D201	8C
D202	4E

REF No.	LOCATION
RESISTOR	
R202	5B
R204	5B
R205	5B
R206	2B
R207	2B
R208	2B
R209	2B
R210	2B
R211	2C
R212	2B
R213	2B
R214	2C
R215	2C
R216	2C
R218	2C
R222	3C
R223	2D
R231	7E

REF No.	LOCATION
RESISTOR	
R232	7E
R233	7E
R234	7E
R235	7D
R236	8D
R238	7D
R239	7B
R240	7E
R241	7D
R242	7D
R243	7E
R245	7D
R246	7C
R247	7C
R248	5E
R249	6D
R255	8C
R256	8C

REF No.	LOCATION
RESISTOR	
R257	8B
R259	6A
R261	7B
R262	8B
R265	4B
R272	4A
R273	4A
R275	3A
R276	2A
R277	2E
R278	7B
R279	7B
R280	6B
R281	6C
R283	7C
R285	5B
R290	3B
R291	3B

REF No.	LOCATION
RESISTOR	
R292	3B
R293	2C
R294	2B
R295	2B
R296	2A
R298	6A
CAPACITOR	
C202	2B
C205	2B
C206	2B
C207	2C
C208	2C
C209	2C
C210	2C
C211	2C
C213	2C
C214	3D

REF No.	LOCATION
CAPACITOR	
C215	3D
C216	3C
C217	3C
C218	3C
C219	2C
C220	4D
C225	5D
C228	5E
C237	6E
C242	7D
C245	6C
C257	6B
C259	6B
C265	4A
C266	4A
C267	3B
C268	3A
C269	3A

REF No.	LOCATION
CAPACITOR	
C278	2D
C279	4C
C290	3B
C291	3B
C292	2D
C293	2D
C294	3C
C297	9B
C298	7C
C299	8A
C301	7E
C302	7E
C303	2B
C304	2A
C305	8D
C306	5C
C307	2D

MAIN COMPONENT PARTS LOCATION GUIDE
<DEMODULATOR PWB>

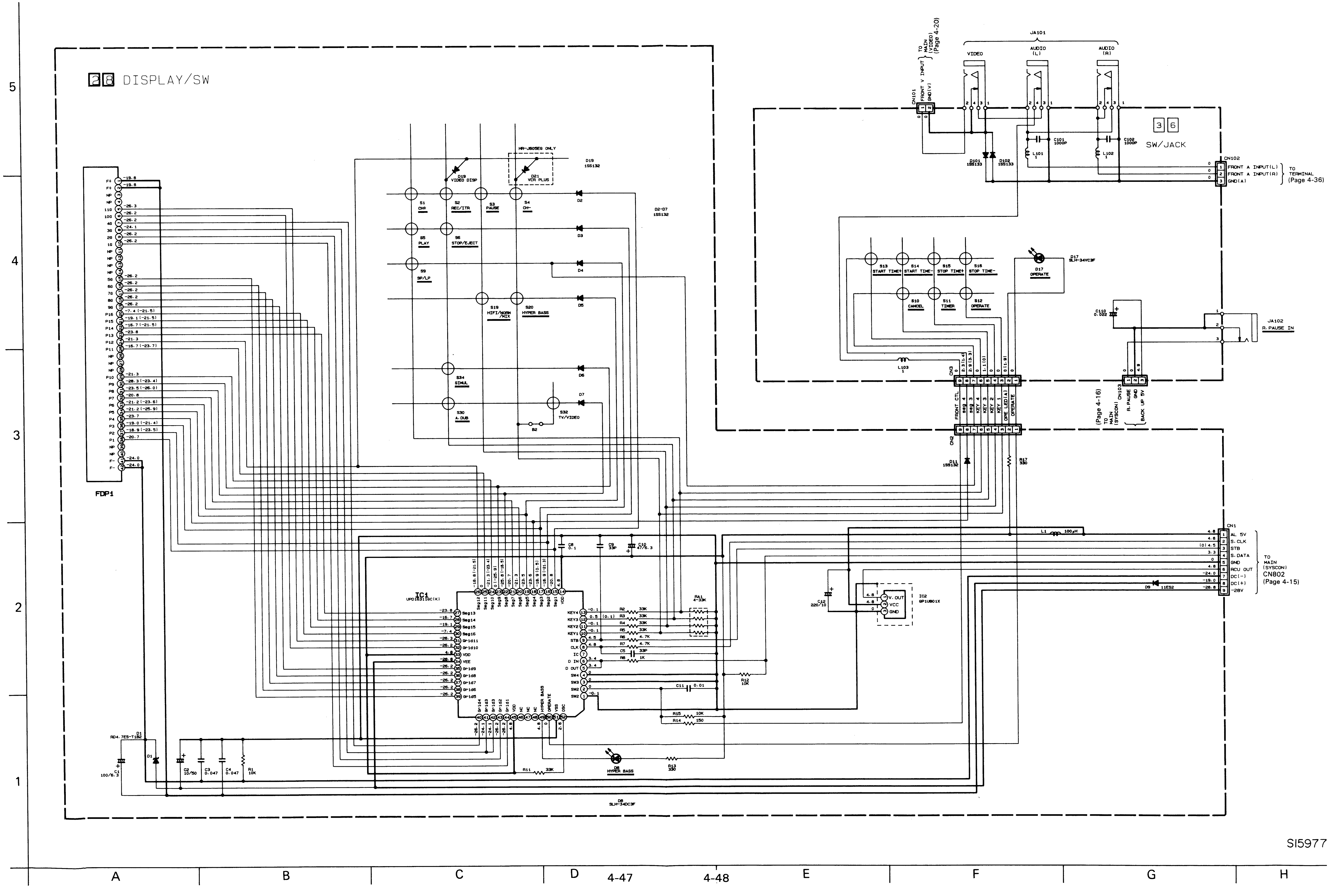
REF. No.	LOCATION
IC	
IC208	6A
IC209	3A

REF. No.	LOCATION
TRANSISTOR	
Q206	7A
Q208	7A
Q209	8C
Q210	8C
Q211	2E

REF. No.	LOCATION
DIODE	
D201	8C

REF. No.	LOCATION
CONNECTOR	
CN201	1D
CN202	1B
CN203	9E
CN204	9B

4.22 DISPLAY/SW & SW/JACK SCHEMATIC DIAGRAMS


28 DISPLAY/SW
36 SW/JACK
FDP1
IC1 UPD16311GC(K)
IC2 GP1U801X
S1 CH+
S2 REC/ITR
S3 PAUSE
S4 CH-
S5 PLAY
S6 STOP/EJECT
S9 SP/LP
S19 HIFI/NORM /MIX
S20 HYPER BASS
S34 SIMUL
S30 A.DUB
S32 TV/VIDEO
S13 START TIME+
S14 START TIME-
S15 STOP TIME+
S16 STOP TIME-
S10 CANCEL
S11 TIMER
S12 OPERATE
D17 OPERATE
D19 VIDEO DISP
D21 VCR PLUS
HR-J605EG ONLY
D2-D7 1SS132
D8 SLH-34DC3F
D6 HYPER BASS
JA101
VIDEO
AUDIO (L)
AUDIO (R)
CN101 FRONT V INPUT GND(V)
TO MAIN (VIDEO) (Page 4-20)
CN102 FRONT A INPUT(L) FRONT A INPUT(R) GND(A)
TO TERMINAL (Page 4-36)
JA102 R.PAUSE IN
CN103 R.PAUSE GND BACK UP 5V
TO MAIN (SYSCON) (Page 4-16)
CN3
CN2 FRONT CTL Seg 4 Seg 3 KEY 4 KEY 3 KEY 2 KEY 1 OPE.LED(A) OPERATE
CN1 AL 5V S.CLK STB S.DATA GND RCU OUT DC(-) DC(+) -28V
TO MAIN (SYSCON) CN802 (Page 4-15)
A B C D E F G H
1 2 3 4 5

SI5977

4.23 DISPLAY/SW & SW/JACK CIRCUIT BOARDS

–DISPLAY/SW–

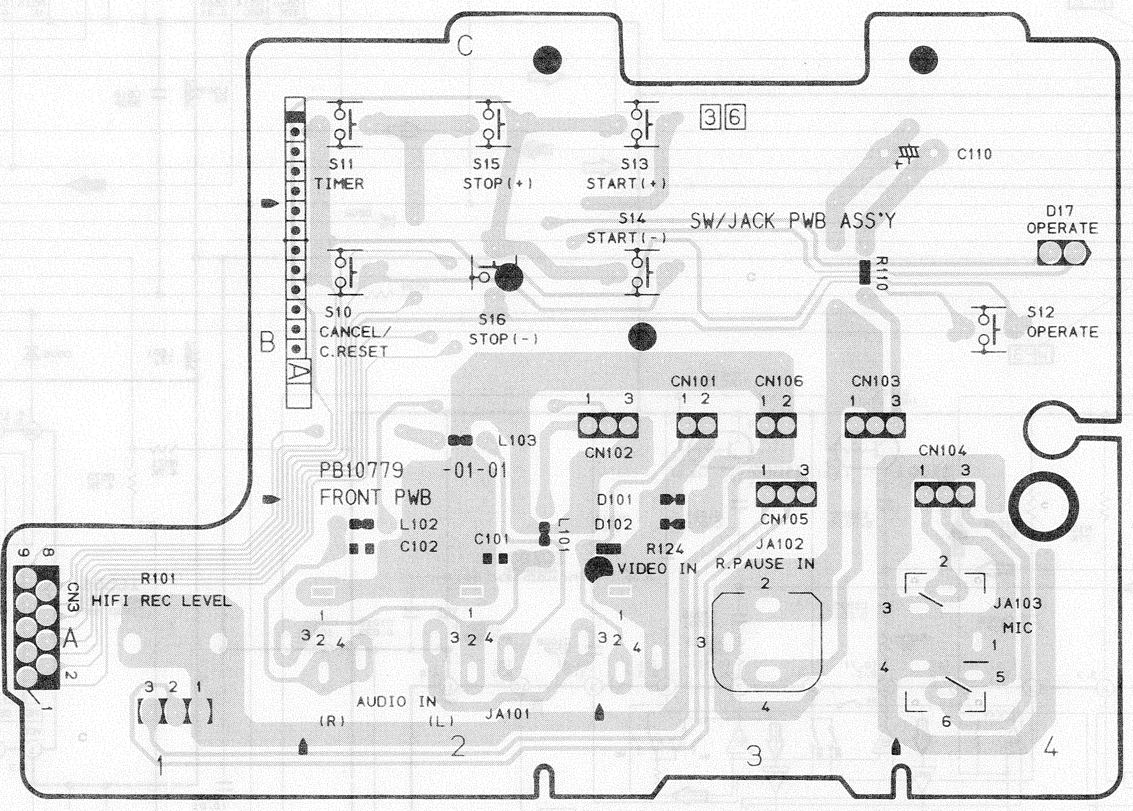
MAIN COMPONENT PARTS
LOCATION GUIDE<DISPLAY/SW PWB>

REF. No.	LOCATION
IC	
IC1	13B
IC2	20B

REF. No.	LOCATION
DIODE	
D1	4N
D2	5D
D3	5E
D4	17E
D5	3B
D6	5A
D7	4B
D8	9B
D9	3D
D11	17B
D19	2C
D21	2D

REF. No.	LOCATION
CONNECTOR	
CN1	2E
CN2	20B

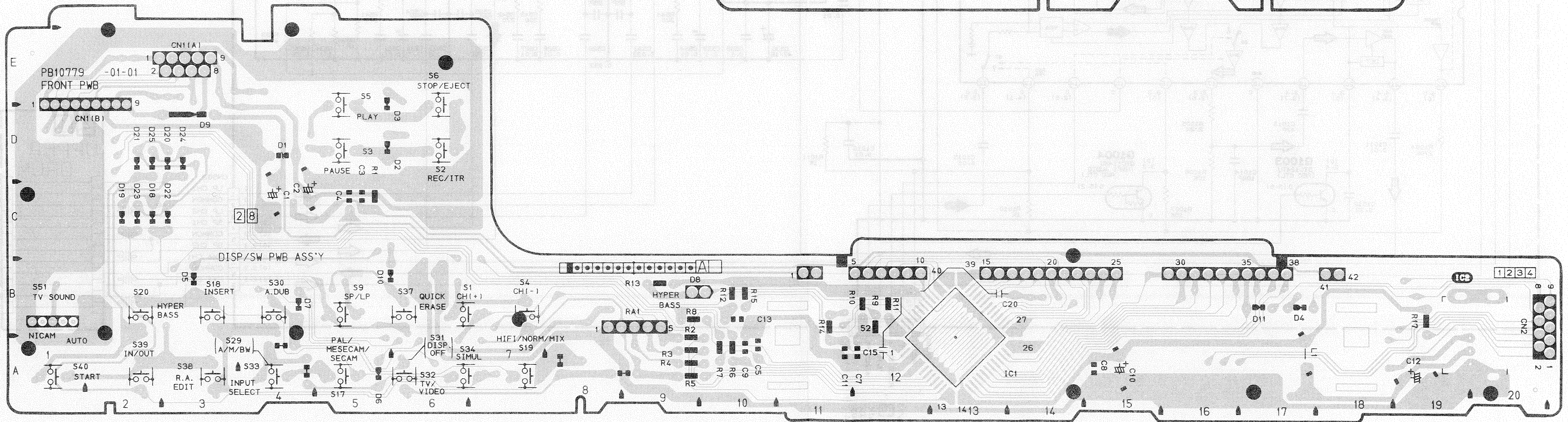
–SW/JACK–


C
S11
TIMER
S15
STOP(+)
S13
START(+)
36
C110
S14
START(-)
SW/JACK PWB ASS'Y
D17
OPERATE
R110
S10
CANCEL/
C.RESET
S16
STOP(-)
S12
OPERATE
B
A
CN101
CN106
CN103
CN102
L103
CN104
PB10779 -01-01
FRONT PWB
L102
C102
C101
L101
D101
D102
R124
VIDEO IN
CN105
JA102
R.PAUSE IN
R101
HIFI REC LEVEL
CN3
JA103
MIC
AUDIO IN
(R)
(L)
JA101
1
2
3
4

MAIN COMPONENT PARTS
LOCATION GUIDE<SW/JACK PWB>

REF. No.	LOCATION
DIODE	
D17	4B
D101	3B
D102	3A

REF. No.	LOCATION
CONNECTOR	
CN3	1A
CN101	3B
CN102	3B
CN103	3B


E
D
C
B
A
CN1(A)
PB10779 -01-01
FRONT PWB
CN1(B)
D9
S5
PLAY
D3
S6
STOP/EJECT
D1
S3
PAUSE
C3
R1
D2
S2
REC/ITR
D21
D25
D20
D24
D19
D23
D18
D22
C1
C2
C4
28
DISP/SW PWB ASS'Y
S51
TV SOUND
NICAM
AUTO
D5
S20
HYPER
BASS
S18
INSERT
S30
A.DUB
D7
S9
SP/LP
D10
S37
QUICK
ERASE
S1
CH(+)
S4
CH(-)
S39
IN/OUT
S29
A/M/BW
S33
PAL/
MESECAM/
SECAM
S31
DISP
OFF
S34
SIMUL
HIFI/NORM/MIX
S19
S40
START
S38
R.A.
EDIT
INPUT
SELECT
S17
D6
S32
TV/
VIDEO
D8
HYPER
BASS
R13
RA1
R8
R2
R3
R4
R5
R12
R15
R6
R7
C9
C5
C13
R10
R9
R11
R14
C15
C11
C7
C20
IC1
C8
C10
D11
D4
R17
C12
IC2
CN2
1234
2
3
4
5
6
7
8
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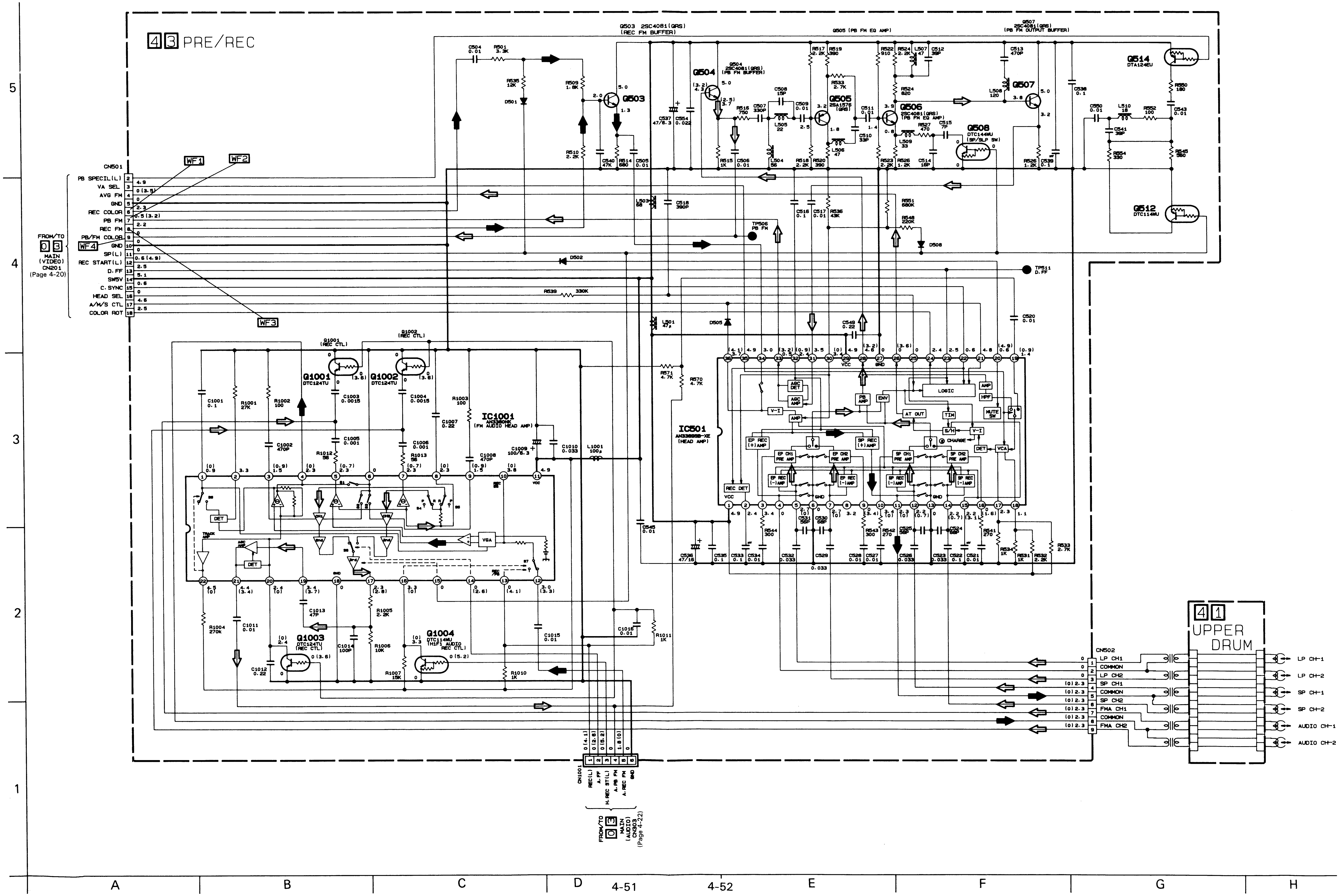
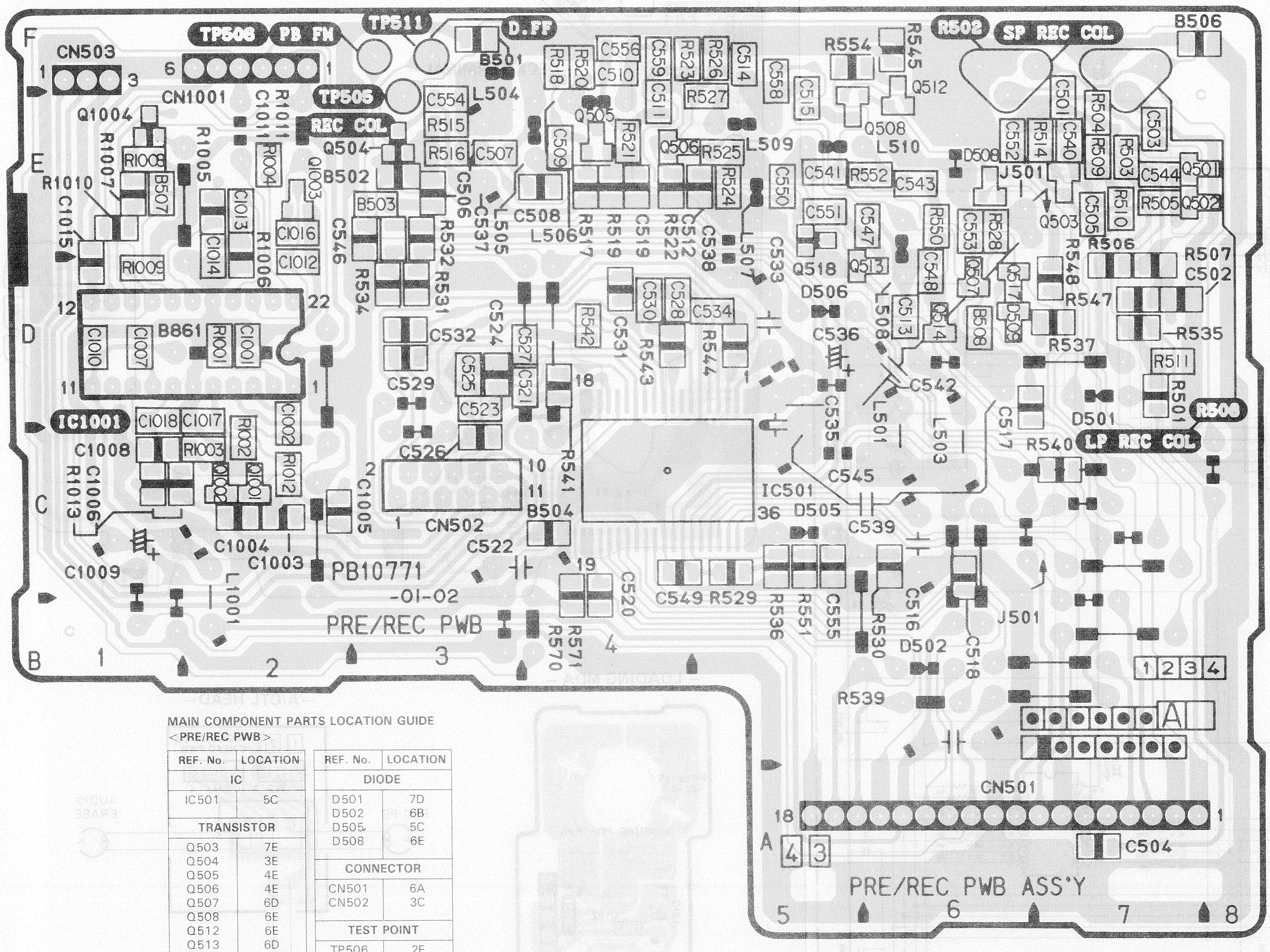
19
20

4.24 PRE/REC SCHEMATIC DIAGRAM


43 PRE/REC
Q503 2SC4081(QRS) (REC FM BUFFER)
Q504 2SC4081(QRS) (PB FM BUFFER)
Q505 (PB FM EQ AMP) 2SA1576 (QRS)
Q506 2SC4081(QRS) (PB FM EQ AMP)
Q507 2SC4081(QRS) (PB FM OUTPUT BUFFER)
Q508 DTC144WU (SP/SLP SW)
Q514 DTA124EU
Q512 DTC144WU
TP506 PB FM
TP511 D.FF
IC501 AN3398S-XE (HEAD AMP)
IC1001 AN3380NK (FM AUDIO HEAD AMP)
Q1001 (REC CTL) DTC124TU
Q1002 (REC CTL) DTC124TU
Q1003 DTC124TU (REC CTL)
Q1004 DTC114WU (HIFI AUDIO REC CTL)
CN501
PB SPECIL(L) 2 4.9
VA SEL 3 0(3.5)
AVG FM 4 0
GND 5 2.3
REC COLOR 6 0.5(3.2)
PB FM 7 2.2
REC FM 8 0
PB/FM COLOR 9 0
GND 10 0
SP(L) 11 0.6(4.9)
REC START(L) 12 2.5
D.FF 13 5.1
SW5V 14 0.6
C.SYNC 15 0
HEAD SEL 16 4.6
A/M/S CTL 17 2.5
COLOR ROT 18
WF1
WF2
WF3
WF4
FROM/TO 03 MAIN (VIDEO) CN201 (Page 4-20)
CN1001
REC(L)
A.FF
H.REC ST(L)
A.PB FM
A.REC FM
GND
FROM/TO 03 MAIN (AUDIO) CN303 (Page 4-22)
CN502
LP CH1 1 0
COMMON 2 0
LP CH2 3 0
SP CH1 4 (0)2.3
COMMON 5 (0)2.3
SP CH2 6 (0)2.3
FMA CH1 7 (0)2.3
COMMON 8 (0)2.3
FMA CH2 9 (0)2.3
41 UPPER DRUM
LP CH-1
LP CH-2
SP CH-1
SP CH-2
AUDIO CH-1
AUDIO CH-2
LOGIC
AGC DET
AGC AMP
V-I
PB AMP
ENV
AT OUT
TIM
MUTE SW
S/H
CHARGE
DET
VCA
HPF
EP REC (+)AMP
SP REC (+)AMP
EP CH1 PRE AMP
EP CH2 PRE AMP
SP CH1 PRE AMP
SP CH2 PRE AMP
REC DET
VCC
GND
VGA
TRACK AMP
AGC AMP
5
4
3
2
1
A
B
C
D
E
F
G
H

4.25 PRE/REC CIRCUIT BOARD


F
E
D
C
B
1
2
3
4
5
6
7
8
CN503
CN1001
TP506
PB FM
TP511
D.FF
TP505
REC COL
R502
SP REC COL
B506
R508
LP REC COL
IC1001
IC501
CN502
CN501
J501
PB10771
-01-02
PRE/REC PWB
PRE/REC PWB ASS'Y
Q1004
R1007
R1010
C1015
R1009
R1008
B507
R1005
C1011
R1011
R1004
Q1003
C1013
C1014
R1006
C1016
C1012
B861
C1010
C1007
R1001
C1001
C1018
C1017
R1003
R1002
Q1002
Q1001
C1002
R1012
C1008
R1013
C1006
C1004
C1003
C1009
L1001
C1005
Q504
B502
B503
R532
R531
R534
C546
C532
C529
C526
C525
C523
C524
C527
C521
C554
R515
R516
C507
L504
C506
C537
L505
C508
L506
B501
R518
R520
C556
C510
C559
C511
R523
R526
R527
C514
C558
Q505
C509
R521
Q506
R525
R524
L509
R517
R519
C519
R522
C512
C538
C550
L507
C533
C530
C528
C534
R542
C531
R543
R544
R541
B504
C522
C520
R571
R570
C549
R529
R536
R551
C555
R554
R545
Q512
C515
Q508
L510
C541
R552
C543
C551
C547
Q518
Q513
D506
C536
L508
C513
C514
R550
C548
C553
Q507
R528
Q517
D509
B508
L501
C542
C535
C545
L503
D505
C539
C516
R530
D502
C518
R539
C517
D508
C552
R514
C501
C540
R504
R509
R503
C503
C544
Q501
Q503
C505
R510
R505
Q502
R506
R548
R507
C502
R547
R535
R537
R511
R501
D501
R540
C504
1 2 3 4
A
18
1
12
22
11
36
10
19

MAIN COMPONENT PARTS LOCATION GUIDE
<PRE/REC PWB>

REF. No.	LOCATION
IC	
IC501	5C
TRANSISTOR	
Q503	7E
Q504	3E
Q505	4E
Q506	4E
Q507	6D
Q508	6E
Q512	6E
Q513	6D
Q514	6D

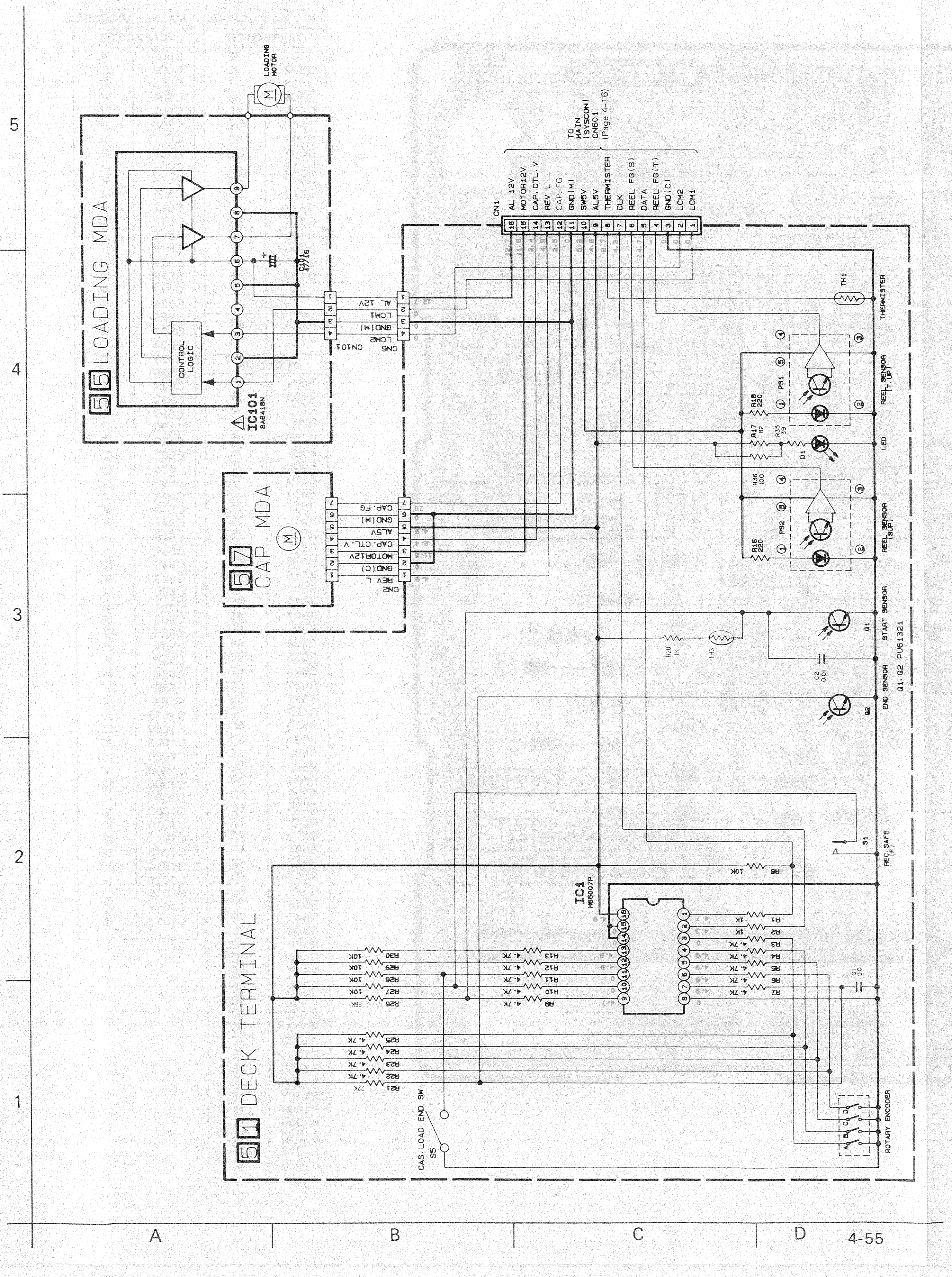
REF. No.	LOCATION
DIODE	
D501	7D
D502	6B
D505	5C
D508	6E
CONNECTOR	
CN501	6A
CN502	3C
TEST POINT	
TP506	2F
TP511	3F

LEADLESS COMPONENT PARTS
LOCATION GUIDE
<PRE/REC PWB>

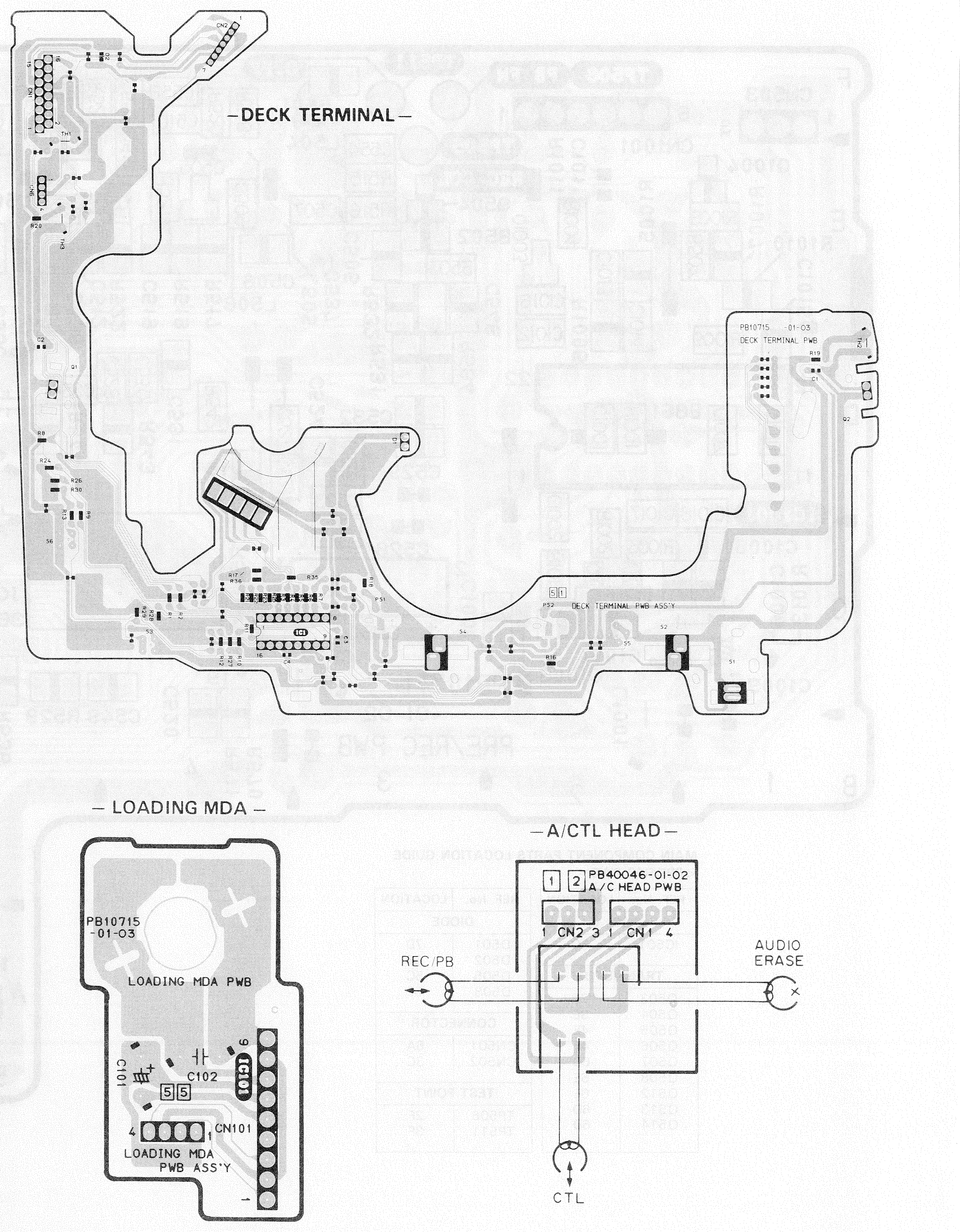
REF. No.	LOCATION
TRANSISTOR	
Q501	7E
Q502	7E
Q503	7E
Q504	3E
Q505	4E
Q506	4E
Q507	6D
Q508	6E
Q512	6E
Q513	6D
Q514	6D
Q517	6D
Q518	5E
Q1001	2C
Q1002	2C
Q1003	2E
Q1004	1E
DIODE	
D508	6E
D509	6D
RESISTOR	
R501	7D
R503	7E
R504	7E
R505	7E
R506	7E
R507	7E
R509	7E
R510	7E
R511	7D
R514	7E
R515	3E
R516	3E
R517	4E
R518	4F
R519	4E
R520	4F
R521	4E
R522	4E
R523	5F
R524	5E
R525	5E
R526	5F
R527	5E
R528	6E
R529	5C
R530	6C
R531	3D
R532	3E
R533	3E
R534	3D
R535	7D
R536	5C
R537	7D
R540	7C
R541	4D
R542	4D
R543	4D
R544	5D
R545	6F
R547	7D
R548	7D
R550	6E
R551	6C
R552	6E
R554	6F
R571	4B
R1001	2D
R1002	2C
R1003	2C
R1004	2E
R1005	2E
R1006	2D
R1007	1E
R1008	1E
R1009	1D
R1010	1E
R1012	2C
R1013	1C

REF. No.	LOCATION
CAPACITOR	
C501	7E
C502	7D
C503	7E
C504	7A
C505	7E
C506	3E
C507	3E
C508	4E
C509	4E
C510	4F
C511	4E
C512	5E
C513	6D
C514	5F
C515	5E
C517	6D
C518	6C
C519	4E
C520	4C
C521	4D
C523	3D
C524	3D
C525	3D
C526	3C
C527	4D
C528	4D
C529	4D
C530	4D
C531	4D
C532	3D
C534	5D
C540	7E
C541	5E
C543	6E
C544	7E
C546	3F
C547	6E
C548	6D
C549	4C
C550	5E
C551	5E
C552	6E
C553	6E
C554	3E
C555	5C
C556	4F
C558	5F
C559	4F
C1001	2D
C1002	2C
C1003	2C
C1004	2C
C1005	2C
C1006	1C
C1007	1D
C1008	1C
C1010	1D
C1012	2D
C1013	2E
C1014	2E
C1015	1E
C1016	2E
C1017	2D
C1018	1B

4.26 DECK TERMINAL AND LOADING MDA SCHEMATIC DIAGRAMS


5
4
3
2
1
A
B
C
D
55 LOADING MDA
LOADING MOTOR
CONTROL LOGIC
IC101
BA6418N
C101 47/16
CN101
AL 12V
LCM1
GND(M)
LCM2
CN6
57 CAP MDA
CAP. FG
GND(M)
AL5V
CAP. CTL. V
MOTOR12V
GND(C)
REV L
CN2
CN1
TO MAIN (SYSCON) CN601 (Page 4-16)
AL 12V
MOTOR12V
CAP. CTL. V
REV L
CAP. FG
GND(M)
SW5V
AL5V
THERMISTER
CLK
REEL FG(S)
DATA
REEL FG(T)
GND(C)
LCM2
LCM1
TH1
THERMISTER
PS1
REEL SENSOR (T.UP)
R18 220
R17 82
R35 39
D1
LED
R36 100
PS2
REEL SENSOR (SUP)
R16 220
R20 1K
TH3
C2 0.01
Q1
START SENSOR
Q2
END SENSOR
Q1, Q2 PU61321
S1
REC. SAFE (F)
R8 10K
IC1
M66007P
R1 1K
R2 1K
R3 4.7K
R4 4.7K
R5 4.7K
R6 4.7K
R7 4.7K
C1 0.01
R13 4.7K
R12 4.7K
R11 4.7K
R10 4.7K
R9 4.7K
R30 10K
R29 10K
R28 10K
R27 10K
R26 56K
R25 4.7K
R24 4.7K
R23 4.7K
R22 4.7K
R21 22K
CAS. LOAD END SW
S5
ROTARY ENCODER
51 DECK TERMINAL

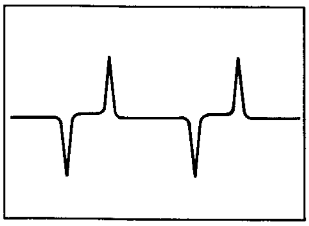
4.27 DECK TERMINAL, LOADING MDA AND A/CTL HEAD CIRCUIT BOARDS


– DECK TERMINAL –
PB10715 -01-03
DECK TERMINAL PWB
DECK TERMINAL PWB ASS'Y
– LOADING MDA –
PB10715 -01-03
LOADING MDA PWB
C101
C102
IC101
55
CN101
LOADING MDA PWB ASS'Y
– A/CTL HEAD –
PB40046-01-02
A/C HEAD PWB
CN2
CN1
REC/PB
AUDIO ERASE
CTL

28 WAVEFORMS

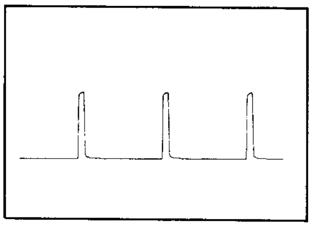
—SERVO—

WF1 TP401



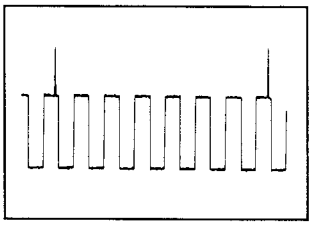
PB 1.2 Vp-p

WF2



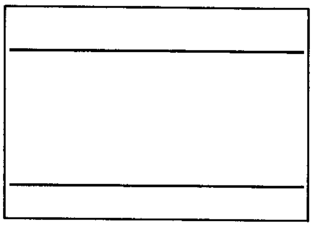
REC/PB 4.3 Vp-p

WF3



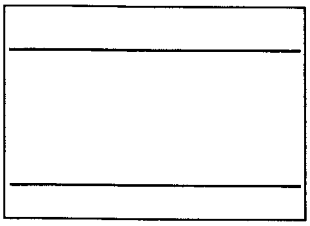
REC 5.0 Vp-p

WF4



PB 2.8 VDC

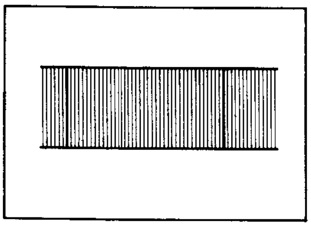
WF5



REC/PB 2.6 VDC

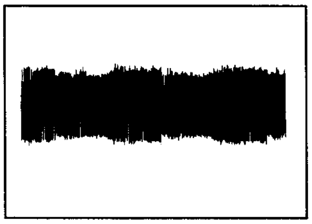
—VIDEO—

WF1 REC FM



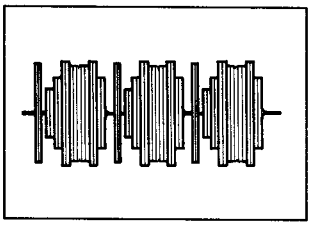
REC 0.68 Vp-p

WF2 PB FM



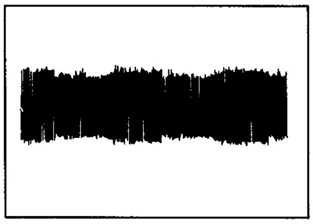
PB 0.35 Vp-p

WF3 REC COLOR



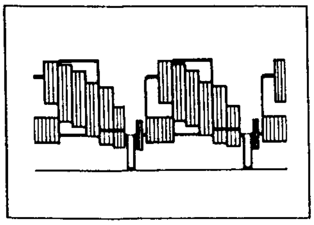
REC 0.24 Vp-p

WF4 PB COLOR



PB 0.35 Vp-p

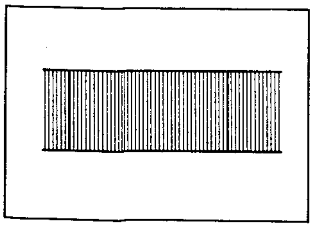
WF5 TP210



REC/PB 1.0 Vp-p

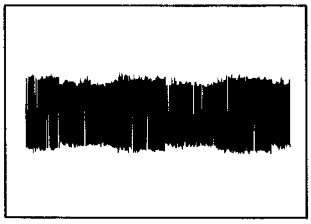
—AUDIO—

WF1 TP333



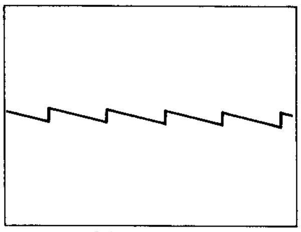
REC/PB 0.18 Vp-p

WF2 TP353



PB 0.15

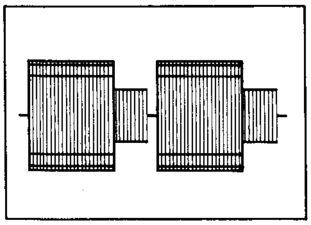
WF3



REC/PB 0.01 Vp-p

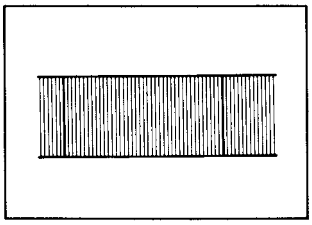
—PRE/REC—

WF1 REC COLOR



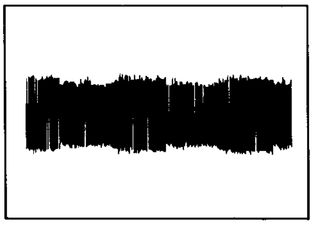
REC 0.022 Vp-p

WF2 REC FM



REC 0.7 Vp-p

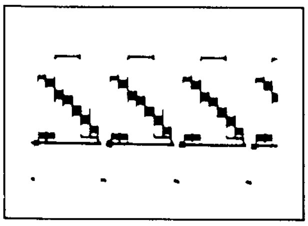
WF3 PB COLOR



PB 0.4 Vp-p

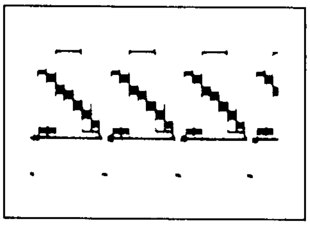
—VIDEO UNIT—

WF1



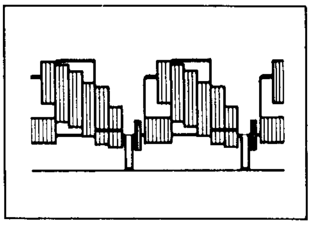
REC 0.5 Vp-p

WF2



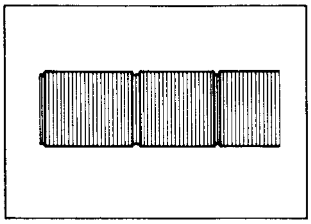
PB 0.13 Vp-p

WF3



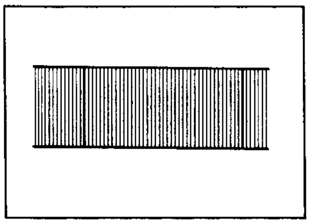
REC 1.4 Vp-p

WF3



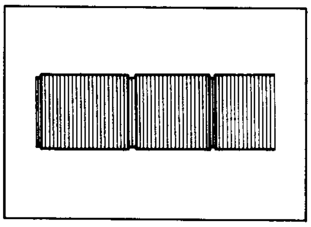
PB 0.9 Vp-p

WF4 REC FM



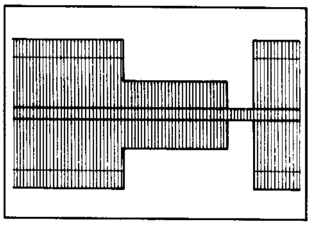
REC 2.0 Vp-p

WF5 PB FM



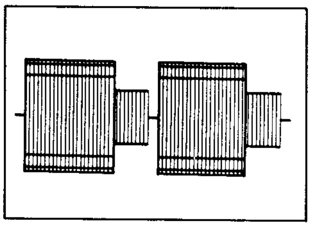
PB 0.5 Vp-p

WF6 REC COLOR



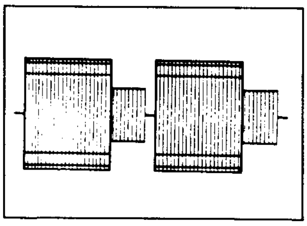
REC 0.4 Vp-p

WF7



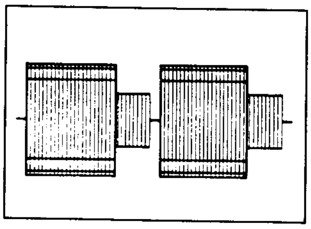
REC 1.3 Vp-p

WF8



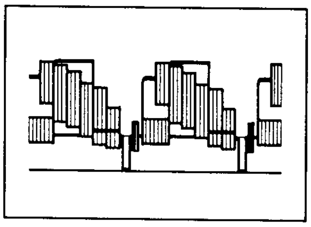
REC 0.9 Vp-p

WF9 PB COLOR



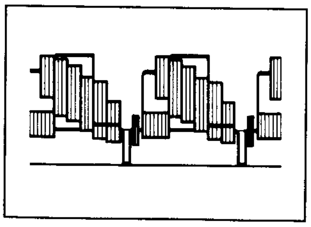
PB 0.1 Vp-p

WF10



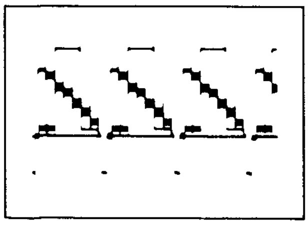
REC 1.1 Vp-p

WF11



REC 2.3 Vp-p
PB 2.6 Vp-p

WF12



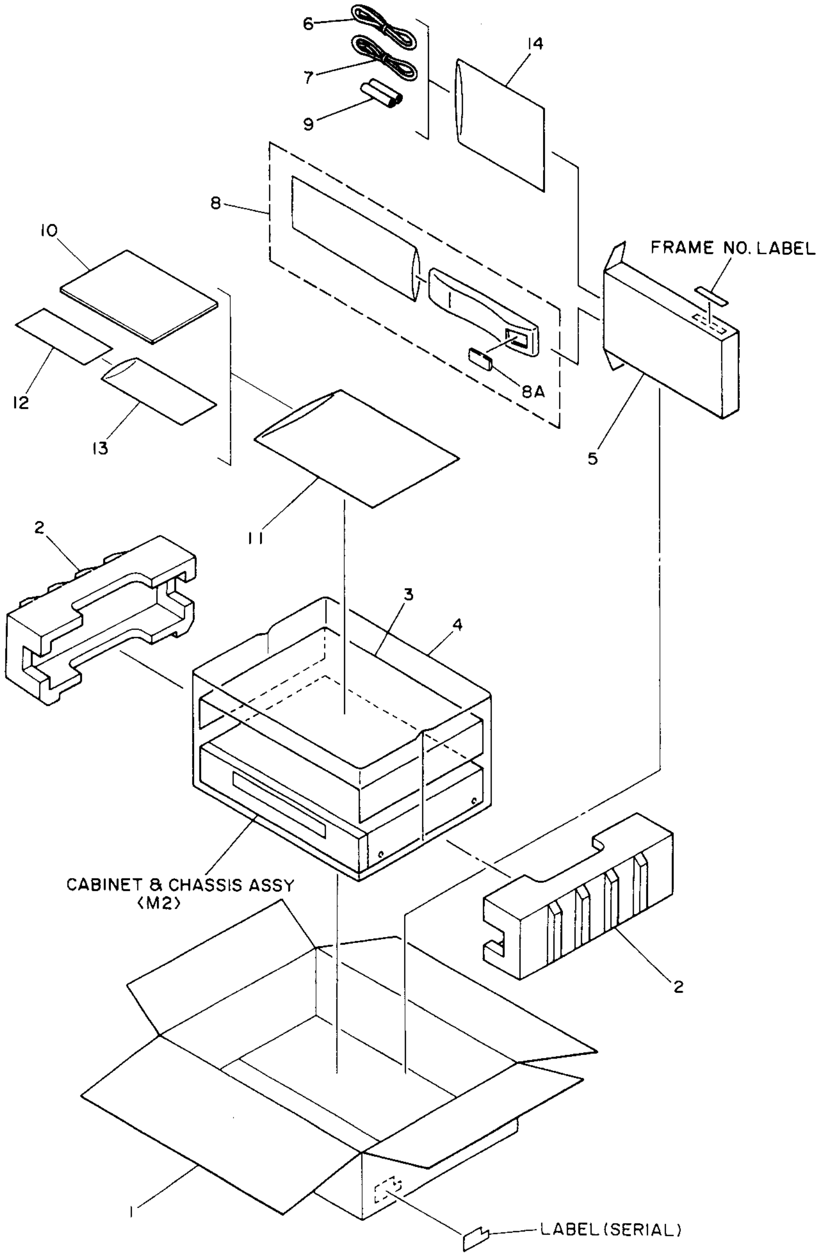
REC/PB 0.4 Vp-p

SECTION 5
PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

5.1 PACKING AND ACCESSORY ASSEMBLY <M1>



****

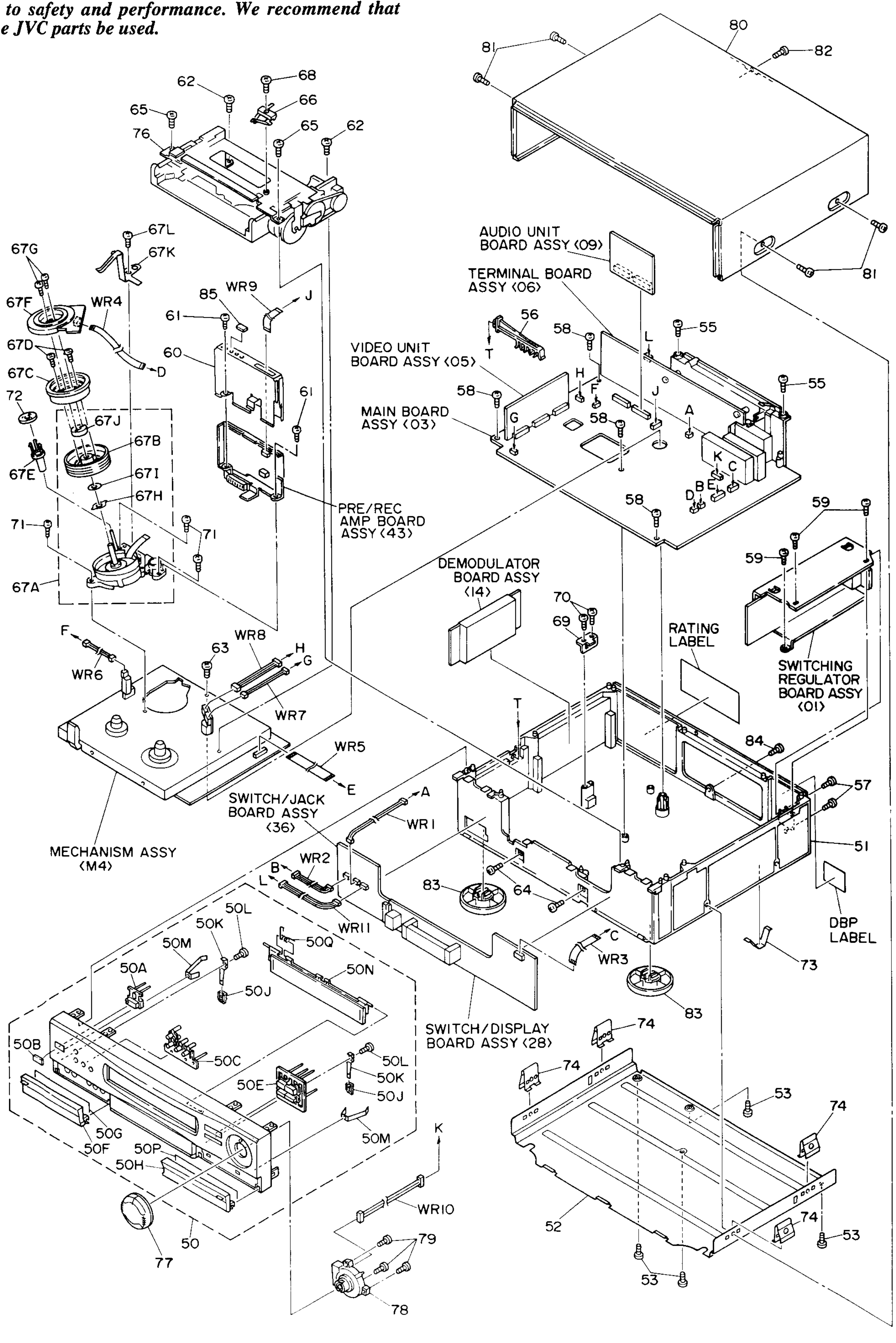
PACKING AND ACCESSORY ASSEMBLY <M1>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	1	PQ34868-2	PACKING CASE,HR-J600EG
		PQ34868-6	PACKING CASE,HR-J605EG
	2	PQ34775A	CUSHION ASSY
	3	PQ41026-8	PROTECT SHEET
	4	PQM30021-59-11	POLY BAG
	5	PQ34715	CASE(ACCESSORY)
⚠	6	PEAC0222	RF CABLE
⚠	7	QMP40E0-183	POWER CORD
⚠	8	PQ11534A-1	REMOTE CONTROLLER,HR-J600EG
⚠		PQ11534E	REMOTE CONTROLLER,HR-J605EG
	8A	PQ46063	CAP(BATTERY)
	9	UM-3DJ2P	BATTERY,X2
⚠	10	PU30425-1426	INSTRUCTIONS,HR-J605EG
⚠		PU30425-1405	INSTRUCTIONS,HR-J600EG
	11	QPGA025-03505	POLY BAG
	12	BT-20135	WARRANTY CARD
	13	PQ33909	POLY BAG
	14	QPGA020-02005	POLY BAG

5.2 CABINET AND CHASSIS ASSEMBLY <M2>

BEWARE OF BOGUS PARTS

Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.



80
81
82
AUDIO UNIT BOARD ASSY <09>
TERMINAL BOARD ASSY <06>
VIDEO UNIT BOARD ASSY <05>
MAIN BOARD ASSY <03>
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59
62
68
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65
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67L
67K
67G
67F
WR4
67D
67C
72
67J
67B
67E
67I
67H
71
67A
85
WR9
61
60
J
D
PRE/REC AMP BOARD ASSY <43>
DEMODULATOR BOARD ASSY <14>
70
69
RATING LABEL
SWITCHING REGULATOR BOARD ASSY <01>
T
L
H
F
G
A
K
C
B
E
F
WR6
63
WR8
WR7
WR5
MECHANISM ASSY <M4>
SWITCH/JACK BOARD ASSY <36>
WR1
WR2
WR11
WR3
84
57
51
DBP LABEL
73
83
64
50L
50K
50M
50A
50Q
50N
50J
50B
50C
50E
50G
50F
50P
50H
77
50
SWITCH/DISPLAY BOARD ASSY <28>
74
53
52
WR10
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78

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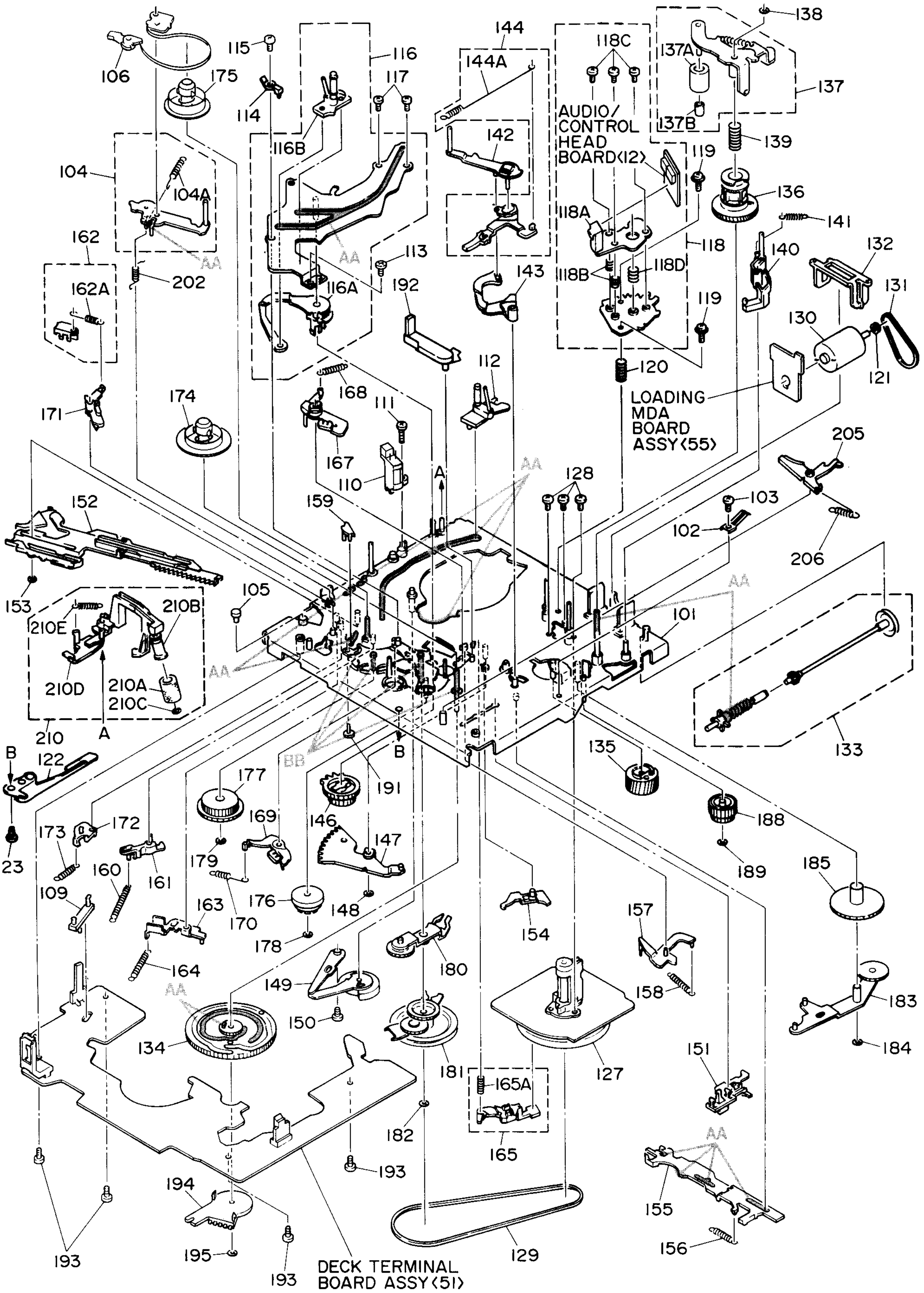
CABINET AND CHASSIS ASSEMBLY <M2>

‡⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	50	PQ11531M	FRONT PANEL ASSY,HR-J605EG
		PQ11531C	FRONT PANEL ASSY,HR-J600EG
	50A	PQ34725-4	BUTTON(POWER),HR-J605EG
		PQ34725-2	BUTTON(POWER),HR-J600EG
	50B	PQ46050	INDICATOR
	50C	PQ21549-6	BUTTON(1),HR-J605EG
		PQ21549-5	BUTTON(1),HR-J600EG
	50E	PQ21559-4	BUTTON(OPE),HR-J605EG
		PQ21559-2	BUTTON(OPE),HR-J600EG
	50F	PQ21547-9	DOOR(L),HR-J605EG
		PQ21547-3	DOOR(L),HR-J600EG
	50G	PQ34734-5	PLATE(DOOR L),HR-J605EG
		PQ34734-2	PLATE(DOOR L),HR-J600EG
	50H	PQ21548-8	DOOR(R),HR-J605EG
		PQ21548-2	DOOR(R),HR-J600EG
	50J	PQ46167	SPRING(2),X2
	50K	PQ46166	SPRING(1),X2
	50L	SDSF2005Z	SCREW,X2
	50M	PQ34736	EARTH PLATE,X2
	50N	PQ21560-8	CASSETTTE DOOR,HR-J605EG
		PQ21560-2	CASSETTE DOOR,HR-J600EG
	50P	PQ34735-6	PLATE(DOOR R),HR-J605EG
		PQ34735-2	PLATE(DOOR R),HR-J600EG
	50Q	PQ45704	TORSION SPRING
⚠	51	PQ11548	BOTTOM CHASSIS
⚠	52	PQ11556-1-2	BOTTOM COVER
	53	SDSF3010Z	SCREW, X4 BOTTOM COVER
	55	SDSF3008Z	SCREW,X2 TERMINAL BOARD
	56	PQ34776	PWB HOLDER,VIDEO UNIT
	57	SDSF3010M	SCREW,X2 INLET
	58	SDSF3008Z	SCREW,X4 MAIN
	59	SDSF3008Z	SCREW,X3 SW REG
	60	PQ21578	SHIELD CASE(PRE
	61	SDSG2606Z	SCREW,X2 PRE
	62	SDST2610Z	SCREW,X2 CASSETTE HOUSING
	63	PQ43831	SPECIAL SCREW,MECHA
	64	SDST4014Z	SCREW,X2 MECHA
	65	SDSF3008Z	SCREW,X2 CASSETTE HOUSING
	66	PQ46083	EARTH PLATE,CASSETTE HOUSING
	67A	PDM2247B	DRUM SUB ASS′Y
	67B	PDM3353Q	UPPER DRUM ASSY
	67C	PDZ0136	ROTOR ASSY
	67D	SPSH2660Z	SCREW,X2
	67E	PDM4300A-3	I.D.ROLLER ASSY
⚠	67F	PDZ0119-5	STATOR ASSY
	67G	SPSP2606Z	SCREW,X2
	67H	PDM4314A-2	BRUSH ASSEMBLY
	67I	PDM4050-9	WASHER
	67J	PDM4332A	COLLAR ASSY
	67K	PDM3372	EARTH PLATE
	67L	SPSG2606Z	SCREW
	68	SPST2604Z	SCREW,CASSETTE HOUSING
	69	PQ46100	BRACKET,MECHA
	70	SDSF3008Z	SCREW,X2 BRACKET
	71	SPST2612Z	SCREW,X3 DRUM
	72	PQ45339-2-3	INERTIA PLATE
	73	PQ34737	EARTH PLATE,REC
	74	PQ46135	EARTH PLATE,X4 BOTTOM COVER
	76	PUS29662A-3	CASSETTE HOUSING ASSY
	77	PQ34862B-2	KNOB(SHUTTLE) ASSY,HR-J605EG
		PQ34862D-2	KNOB(SHUTTLE)ASSY,HR-J600EG
	78	PEME0913	SHUTTLE ASSY
	79	SDSF2610Z	SCREW,X3 SHUTTLE
⚠	80	PQ11550	TOP COVER,HR-J600EG
⚠		PQ11550-4	TOP COVER,HR-J605EG
	81	PQ43827	SPECIAL SCREW,X4 TOP COVER
	82	SDSF3010M	SCREW,TOP COVER
	83	PQ46094A	FOOT ASSEMBLY,X2 HR-J600EG
		PQ46094C	FOOT ASSEMBLY,X2 HR-J605EG
	84	SDSF3010M	SCREW,TERMINAL BOARD
	85	PQM30029-27	SPACER,PRE/REC
	WR1	PW30504-02W5401	WIRE,CN202-M
	WR2	PW30218-0337415	WIRE,CN602-M
	WR3	PW30802-0932	FFC WIRE,CN802-M
	WR4	PW30803-0446	FFC WIRE,CN402-M
	WR5	PW30802-1626	FFC WIRE,CN601-M
	WR6	PW30504-02W1601	WIRE,CN303-M
	WR7	PW30504-03W5001	WIRE,CN401-M
	WR8	PW30504-04W3207	WIRE,CN302-M
	WR9	PW30504-06W1407	WIRE,CN304-M
	WR10	PW30218-0443813	WIRE,CN603-M
	WR11	PW30504-03W5001	WIRE,CN102-SW

5.3 MECHANISM ASSEMBLY <M4>


106
175
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116B
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144A
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118C
AUDIO/ CONTROL HEAD BOARD<12>
137A
137B
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137
139
136
141
104
104A
AA
162
162A
202
116A
AA
113
192
143
118A
118B
118D
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119
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121
120
LOADING MDA BOARD ASSY<55>
168
112
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174
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167
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AA
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152
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210E
210B
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BB
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AA
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165A
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AA
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193
DECK TERMINAL BOARD ASSY<51>
129

Category	Part number	MARK
Grease	KANTO-G-31KAV	AA
Oil	COSMO-HV56	BB

NOTE: The section marked in AA and BB indicate lubrication and greasing areas.

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MECHANISM ASSEMBLY <M4>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	101	PQ11473B-4	MAIN DECK ASSY
	102	PQ43849	EARTH PLATE
	103	SPST2604Z	SCREW
	104	PQ45887A-2	TENSION ARM ASSY
	104A	PQ45373-1-3	TENSION SPRING
	105	PQ45374-1-2	ADJUST PIN
	106	PQ34629A	TENSION BAND ASSY
	109	PQ34631	SPRING BASE
	110	PEHE0238	FULL ERASE HEAD
	111	SDSF2614Z	SCREW,FE HEAD
	112	PQ34749A-2	POLE BASE ASSY(SUPPLY)
	113	SDST2608Z	SCREW
	114	PQ45444	STOPPER
	115	SPSF2006Z	SCREW
	116	PQ34619A-1	LOADING ASSY(TAKE UP)
	116A	PQ45286D-3	SPRING STAY ASSY
	116B	PQ34756A	POLE BASE ASSY(TAKE UP)
	117	SDSF2608Z	SCREW,X2
	118	PQ45355B	AUDIO CONTROL HEAD ARM ASSY
	118A	PU61282	AUDIO CONTROL HEAD
	118B	PQM30002-192	COMPRESSION SPRING,X2
	118C	PQ43687A	SPECIAL SCREW,X3
	118D	PQM30002-211	COMPRESSION SPRING
	119	SPSF2608M	SCREW,X2
	120	PQM30002-216	COMPRESSION SPRING
	121	PQ43546-1-2	MOTOR PULLEY
	122	PQ46099	CAPSTAN BRACKET
	123	SDST2606Z	SCREW
⚠	127	PU61313	CAPSTAN MOTOR
	128	SPSG2608Z	SCREW,X3
	129	PQM30003-27	BELT(CAPSTAN MOTOR)
⚠	130	PU60628-2	MODE MOTOR
	131	PQM30003-28-14	BELT(MODE MOTOR)
	132	PQ34025	MOTOR HOLDER
	133	PQ45917A-1	WORM CLUTCH ASSY
	134	PQ11468-1-3	CONTROL CAM
	135	PQ34630	RELAY CAM
	136	PQ21481	PINCH ROLLER CAM
	137	PQ45921A-6	PINCH ROLLER ARM ASSY
	137A	PQ42007C-2	PINCH ROLLER ASSY
	137B	PQ43566	PINCH ROLLER CAP
	138	PQM30017-12	SLIT WASHER
	139	PQM30002-223	COMPRESSION SPRING
	140	PQ34564	PINCH ROLLER LEVER
	141	PQM30001-371-92	TENSION SPRING
	142	PQ45924A-3	GUIDE ARM ASSY
	143	PQ34566-1-2	ARM LEVER
	144	PQ45925A-1	SUB BRAKE ASSY(TAKE UP)
	144A	PQ45926-1-2	TENSION SPRING
	146	PQ34033	LOADING GEAR(TAKE UP)
	147	PQ46217A	ARM GEAR
	148	PQM30017-30	SLIT WASHER
	149	PQ45298C	LOADING GEAR ASSY(SUPPLY)
	150	PQ45913	SPECIAL SCREW
	151	PQ45399A-3	SLIDING BASE ASSY
	152	PQ11469-1-5	CONTROL PLATE
	153	PQM30017-45	SLIT WASHER
	154	PQ45402	RESET LEVER
	155	PQ21482-1-4	SLIDE PLATE
	156	PQM30001-377	TENSION SPRING
	157	PQ34569-1-2	IDLER CANCEL LEVER
	158	PQM30001-331-72	TENSION SPRING
	159	PQ34570-1-2	TAKE UP HEAD
	160	PQ46024	TENSION SPRING
	161	PQ34571-1-2	T-UP LEVER
	162	PQ45929A-3	SLIDER ASSY
	162A	PQ46003-1-5	TENSION SPRING
	163	PQ34572	REVERSE TENSION LEVER
	164	PQM30001-343-78	TENSION SPRING
	165	PQ45930A-3	CAPSTAN BRAKE ASSY
	165A	PQM30001-378	TENSION SPRING
	167	PQ45932B-3	MAIN BRAKE ASSY(TAKE UP)
	168	PQM30001-331-72	TENSION SPRING
	169	PQ45933A	MAIN BRAKE ASSY(SUPPLY)
	170	PQM30001-374	TENSION SPRING
	171	PQ34574	SUB BRAKE(SUPPLY)
	172	PQ45934-1-1	OFF LEVER
	173	PQM30001-347-74	TENSION SPRING
	174	PQ45935B-3	REEL DISK ASSY(TAKE UP)
	175	PQ45524A-4	REEL DISK ASSY(SUPPLY)
	176	PU61388	CLUTCH GEAR UNIT(TAKE UP)
	177	PU61389	CLUTCH GEAR UNIT(SUPPLY)
	178	PQM30017-7	SLIT WASHER
	179	PQM30017-7	SLIT WASHER
	180	PU61390	IDLER UNIT (D)
	181	PU61317-1-3	CENTER GEAR UNIT
	182	PQM30017-30	SLIT WASHER
	183	PQ45943A-1	DRIVE ARM ASSY
	184	PQM30017-47	SLIT WASHER
	185	PQ45945	RELAY GEAR
	188	PQ45434	CASSETTE HOUSING GEAR
	189	PQM30017-47	SLIT WASHER
	191	PQ45981	C.SWITCH PIN
	192	PQ21488	LED GUIDE
	193	SDSF2608Z	SCREW,X4
	194	PU61322-1-2	ROTARY ENCODER
	195	PQM30017-40	SLIT WASHER
	202	PQ45768-1-3	TORSION SPRING (TENSION ARM)
	205	PQ45927A-1	SUB BRAKE ASSY(TAKE UP 2)
	206	PQM30001-376	TENSION SPRING
	210	PQ45561A-2	CLEANER ASSEMBLY
	210A	PQ44837-2	CLEANER
	210B	PQ45689	ROLLER
	210C	PQM30017-38	SLIT WASHER
	210D	PQ34047-1-2	LIMITTER LEVER
	210E	PQM30001-323	TENSION SPRING

5.4 ELECTRICAL PARTS LIST

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SWITCHING REGULATOR BOARD ASSY <01>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PWBA1	PB20633B-02	SWITCH REGULATOR BOARD ASSY	
	Q1	2SC4304-LF619	TRANSISTOR	
	Q2	2SC3616(MLK)	TRANSISTOR	
	Q31	2SC1740S(RS)	TRANSISTOR	
	D1	10E6-F2	DIODE	
	D2	10E6-F2	DIODE	
	D3	10E6-F2	DIODE	
	D4	10E6-F2	DIODE	
	D5	AU01	FR DIODE	
	D6	AU01	FR DIODE	
	D7	1SS133	DIODE	
	D8	RD27ES-T1B2	DIODE	
	D9	1SS133	DIODE	
	D31	AU01Z	FR DIODE	
	D32	AU01Z	FR DIODE	
	D33	AU01Z	FR DIODE	
	D34	FML-12S	FR DIODE	
	D35	RD16ES-T1B2	ZENER DIODE	
	D36	FMB-24	BARRIER DIODE	
	D37	AU01Z	FR DIODE	
	D38	RD5.6ES-T1B2	ZENER DIODE	
	D39	MTZ30AT-77	ZENER DIODE	
	R2	QRD161J-334	RESISTOR	330KΩ,1/6W
	R3	QRD161J-334	RESISTOR	330KΩ,1/6W
	R4	QRG029J-104G	OMF RESISTOR	100KΩ,2W
	R7	QRX014J-R33Z	MF RESISTOR	0.33Ω,1W
	R8	QRG029J-301G	OMF RESISTOR	300Ω,2W
	R9	QRD161J-152	RESISTOR	1.5KΩ,1/6W
	R11	QRD161J-821	RESISTOR	820Ω,1/6W
	R13	QRD161J-683	RESISTOR	68KΩ,1/6W
	R15	QRG029J-104G	OMF RESISTOR	100KΩ,2W
	R31	QRX014J-4R7Z	MF RESISTOR	4.7Ω,1W
	R32	QRG02DJ-222X	OMF RESISTOR	2.2KΩ,2W
⚠	R33	QRZ0077-101X	FUSIBLE RESISTOR	100Ω,1/4W
	R34	QRD161J-391	RESISTOR	390Ω,1/6W
	R35	QRD161J-561	RESISTOR	560Ω,1/6W
	R36	QRD161J-101	RESISTOR	100Ω,1/6W
	R37	QRD161J-222	RESISTOR	2.2KΩ,1/6W
⚠	C2	QFZ9022-683	F CAPACITOR	0.068μF
⚠	C3	QCZ9016-103M	C CAPACUTOR	
⚠	C7	QCZ9026-222	CAPACITOR	0.0022μF
	C10	PECA0793-826	E CAPACITOR	
⚠	C11	QCZ9026-471	CAPACITOR	470pF
	C12	QETC1HM-225	E CAPACITOR	2.2μF,50V
	C13	QCZ0212-472	CAPACITOR	0.0047μF,1KV
	C14	QCZ0136-101Z	CAPACITOR	100pF
	C15	QFV11HJ-104	F CAPACITOR	0.1μF,50V
	C16	QFLA1HJ-822Z	M CAPACITOR	0.0082μF,50V
	C31	QEGB1AM-107	E CAPACITOR	100μF,10V
	C32	QETC1JM-226	E CAPACITOR	22μF,63V
	C33	QFLA1HJ-103Z	M CAPACITOR	0.01μF,50V
	C34	QEGB1EM-227	E CAPACITOR	220μF,25V
	C35	QETC1EM-227	E CAPACITOR	220μF,25V
	C36	QEGB1CM-687	E CAPACITOR	680μF,16V
	C37	QETB1CM-108	E CAPACITOR	1000μF,16V
	C38	QEGB1AM-108	E CAPACITOR	1000μF,10V
	C39	QETB1AM-108	E CAPACITOR	1000μF,10V
	C40	QETC1HM-226	E CAPACITOR	22μF,50V
	C41	QETC1HM-105	E CAPACITOR	1μF,50V
	C42	QFN31HJ-103	M CAPACITOR	0.01μF,50V
	C43	QFN31HJ-103	M CAPACITOR	0.01μF,50V
	L31	PELN0628-330KZ	COIL	33μH
	L32	PELN0628-330KZ	COIL	33μH
	L33	PELN0628-330KZ	COIL	33μH
⚠	PC1	PC120FY9	PH COUPLER	
⚠	T1	PELN0890	SW TRANS	
⚠	AO1	PEMC0973-03	AC INLET	
⚠	BKT1	PQ21566-1-1	TRANS BRACKET	
⚠	FC1	PEMC0965-Z	FUSE CLIP,F1	
⚠	FC2	PEMC0965-Z	FUSE CLIP,F1	
⚠	LF1	PELN0885	LINE FILTER	
⚠	LF2	PU60347	LINE FILTER	
	SCW1	SDST3006Z	SCREW,X3 TRANS BRACKET	
	SCW2	SDSG3008Z	SCREW	
	SCW3	SDSG3006Z	SCREW	
	SCW4	SDSG3008Z	SCREW,X2 H SINK	
	SCW5	SDSG3006Z	SCREW	
⚠	SLD1	PQ44610-1-2	HEAT SINK,Q1	
⚠	SLD2	PQ46005	H.SINK(1),D34 D36	
	CN1	PEMC0976-110	B TO B CONNECTOR	
⚠	F1	QMF51E2-1R6	FUSE	T1.6A

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MAIN BOARD ASSEMBLY <03>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	PWBA1	PB10768A-02	MAIN BOARD ASSY
	CL1	PU56729-2	WIRE CLAMP
	ETH1	PQ46115	EARTH PLATE,TERMINAL BOARD
	ETH2	PQ46116	EARTH PLATE,TERMINAL BOARD
	JA1	PEMC0824	DIN CONNECTOR,VPT I/O
	SCW1	SDST2605Z	SCREW,RF CONVERTOR
	SCW2	SDSF3008Z	SCREW,X9
	SPC1	PU60010	SPACER
	TB1	PB10775A	TERMINAL BOARD ASSEMBLY
	TB2	PQ21565-1-3	TERMINAL BOARD

- TUNER SECTION -

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
⚠	RF1	PERF0131	RF CONVERTER
⚠	TNR1	PERF0123	TUNER
⚠	TNR2	PERF0128	IF UNIT
	Q1	DTC114ES	TRANSISTOR
		or KRC102M	TRANSISTOR
	Q2	2SB810H,J	TRANSISTOR
	Q3	2SD1450S,T	TRANSISTOR
	Q12	2SK381(C)	FE TRANSISTOR
	Q13	DTC144ES	TRANSISTOR
		or KRC104M	TRANSISTOR
	Q14	2SC1740S(S)	TRANSISTOR
	Q15	2SA933S(S)	TRANSISTOR
	Q16	2SC1740S(S)	TRANSISTOR
	D1	MTZ33CT-77	ZENER DIODE
	D2	1SS133	DIODE
	D3	1SS133	DIODE
	D4	1SS133	DIODE

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
R1	QRSA08J-152YN	RESISTOR	1.5KΩ,1/10W
R2	QRSA08J-153YN	RESISTOR	15KΩ,1/10W
R3	QRSA08J-331YN	RESISTOR	330Ω,1/10W
R30	QRSA08J-105YN	RESISTOR	1MΩ,1/10W
R31	QRSA08J-683YN	RESISTOR	68KΩ,1/10W
R32	QRSA08J-393YN	RESISTOR	39KΩ,1/10W
R33	QRSA08J-821YN	RESISTOR	820Ω,1/10W
R34	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R35	QRSA08J-223YN	RESISTOR	22KΩ,1/10W
R36	QRSA08J-153YN	RESISTOR	15KΩ,1/10W
R37	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R38	QRSA08J-682YN	RESISTOR	6.8KΩ,1/10W
R39	QRSA08J-123YN	RESISTOR	12KΩ,1/10W
C1	QETF1CM-336	E CAPACITOR	33μF,16V
C6	QETF1CM-106	E CAPACITOR	10μF,16V
C7	QETC1HM-106	E CAPACITOR	10μF,50V
C8	QCYA1HK-102	CAPACITOR	0.001μF,50V
C9	QCYA1HK-102	CAPACITOR	0.001μF,50V
C10	QCYA1HK-471	CAPACITOR	470pF,50V
C13	QCYA1HK-222	CAPACITOR	0.0022μF,50V
C14	QCFA1HZ-223	CAPACITOR	0.022μF,50V
C15	QETF1HM-474	E CAPACITOR	0.47μF,50V
L1	PU59152-6R8J	COIL	6.8μH
T1	PELN0806	COIL	
WR1	PW30504-03R3804	WIRE,(MAIN-CN1)	
WR2	PW30401-BB12T	COAXIAL CABLE	
CN1	PU59555-3	CONNECTOR	

- VPS SECTION -

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
IC101	SAA4700	IC	
R101	QRSA08J-822YN	RESISTOR	8.2KΩ,1/10W
R102	QRSA08J-753YN	RESISTOR	75KΩ,1/10W
R103	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
C101	QCFA1HZ-223	CAPACITOR	0.022μF,50V
C102	QCYA1HK-472	CAPACITOR	0.0047μF,50V
C103	QFV11HJ-104	F CAPACITOR	0.1μF,50V
C104	QCYA1HJ-102	CAPACITOR	0.001μF,50V
C105	QCYA1HK-472	CAPACITOR	0.0047μF,50V
C106	QFV11HJ-104	F CAPACITOR	0.1μF,50V
C107	QCYA1HJ-471	CAPACITOR	470pF,50V

- VIDEO SECTION -

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
IC221	LVA523SA	IC	
	or LVA523S	IC	
IC230	BA7630S	IC	
IC250	BA7106LS	IC	
	or XRA7106LS	IC	
Q201	2SA1309(RS)	TRANSISTOR	
	or 2SA1267(G)-TJK	TRANSISTOR	
	or 2SA933S(RS)	TRANSISTOR	
Q202	2SA1309(RS)	TRANSISTOR	
	or 2SA933S(RS)	TRANSISTOR	
	or 2SA1267(G)-TJK	TRANSISTOR	
Q203	2SC1740S(RS)	TRANSISTOR	
	or 2SC3199(G)	TRANSISTOR	
	or 2SC3311A(RS)	TRANSISTOR	
	or 2SC536SPA(G)	TRANSISTOR	
Q204	2SC1740S(RS)	TRANSISTOR	
	or 2SC3199(G)	TRANSISTOR	
	or 2SC3311A(RS)	TRANSISTOR	
	or 2SC536SPA(G)	TRANSISTOR	
Q230	2SA1309(RS)	TRANSISTOR	
	or 2SA1267(G)-TJK	TRANSISTOR	
	or 2SA933S(RS)	TRANSISTOR	
Q231	2SA1309(RS)	TRANSISTOR	
	or 2SA933S(RS)	TRANSISTOR	
	or 2SA1267(G)-TJK	TRANSISTOR	
D201	1SS133	DIODE	
D202	1SS133	DIODE	
D250	1SS133	DIODE	
R201	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R202	QRD161J-123	RESISTOR	12KΩ,1/6W
R203	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R204	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R205	QRD161J-222	RESISTOR	2.2KΩ,1/6W
R206	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R207	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R208	QRD161J-152	RESISTOR	1.5KΩ,1/6W
R209	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R210	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R211	QRD161J-562	RESISTOR	5.6KΩ,1/6W
R213	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R214	QRSA08J-273YN	RESISTOR	27KΩ,1/10W
R221	QRSA08J-750YN	RESISTOR	75Ω,1/10W
R222	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R223	QRSA08J-750YN	RESISTOR	75Ω,1/10W
R224	QRSA08J-750YN	RESISTOR	75Ω,1/10W
R230	QRSA08J-335YN	RESISTOR	3.3MΩ,1/10W
R231	QRD121J-391S	RESISTOR	390Ω,1/2W
R232	QRD121J-391S	RESISTOR	390Ω,1/2W
R233	QRSA08J-750YN	RESISTOR	75Ω,1/10W
R234	QRSA08J-750YN	RESISTOR	75Ω,1/10W
R235	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R236	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R237	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R238	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R250	QRSA08J-914YN	RESISTOR	910KΩ,1/10W
R251	QRSA08J-681YN	RESISTOR	680Ω,1/10W
R252	QRSA08J-391YN	RESISTOR	390Ω,1/10W
R253	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R254	QRSA08J-273YN	RESISTOR	27KΩ,1/10W
R256	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
C202	QETF1AM-476	E CAPACITOR	47μF,10V
C203	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C204	QETF1CM-476	E CAPACITOR	47μF,16V
C205	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C221	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C222	QETC0JM-476	E CAPACITOR	47μF,6.3V
C223	QETC1HM-105	E CAPACITOR	1μF,50V
C224	QETF1HM-105	E CAPACITOR	1μF,50V
C225	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C230	QETC0JM-476	E CAPACITOR	47μF,6.3V
C231	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C232	QETC1HM-474	E CAPACITOR	0.47μF,50V
C233	QENF1HM-474	NP E CAPACITOR	0.47μF,50V
C234	QENC1HM-105	NP E CAPACITOR	1μF,50V
C235	QETF1HM-105	E CAPACITOR	1μF,50V
C236	QEKF1CM-476	E CAPACITOR	47μF,16V
C237	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C238	QETC0JM-477	E CAPACITOR	470μF,6.3V
C239	QETC0JM-108	E CAPACITOR	1000μF,6.3V
C250	QERF1CM-106	E CAPACITOR	10μF,16V
C251	QERF1EM-335	E CAPACITOR	3.3μF,25V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C252	QCSA1HJ-471	CAPACITOR	470pF,50V
C254	QCFA1HZ-103	CAPACITOR	0.01µF,50V
C255	QCFA1HZ-103	CAPACITOR	0.01µF,50V
C256	QCFA1HZ-103	CAPACITOR	0.01µF,50V
C257	QCFA1HZ-103	CAPACITOR	0.01µF,50V
C258	QFN31HJ-471	M CAPACITOR	470pF,50V
C259	QCSA1HJ-270	CAPACITOR	27pF,50V
C260	QCYA1HK-472	CAPACITOR	0.0047µF,50V
C261	QCSA1HJ-5R0	CAPACITOR	5pF,50V
C263	QCFA1HZ-103	CAPACITOR	0.01µF,50V
C264	QETA0JM-477	E CAPACITOR	470µF,6.3V
C265	QCTA1CH-101	CAPACITOR	100pF,16V
L201	PU48530-101K	COIL	100µH
L220	PU48530-101K	COIL	100µH
L230	PU48530-101K	COIL	100µH
L231	PU48530-101K	COIL	100µH
L250	PU48530-101K	COIL	100µH
L252	PU60655-2	COIL	
EQ201	PELN0742	EQUALIZER	
CN201	PEMC0975-018	B TO B CONNECTOR	
CN202	PU59555-2	CONNECTOR	

– AUDIO SECTION –

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
IC301	BA6138	IC	
IC302	XRA15218	IC	
	or BA15218	IC	
IC303	XRA7795LS	IC	
	or BA7795LS	IC	
Q302	2SA933S(QR)	TRANSISTOR	
Q303	2SA933S(QR)	TRANSISTOR	
Q304	2SC1740S(RS)	TRANSISTOR	
	or 2SC3199(GB)-TJK	TRANSISTOR	
Q305	2SA933S(QR)	TRANSISTOR	
Q306	2SC1740S(RS)	TRANSISTOR	
	or 2SC3199(GB)-TJK	TRANSISTOR	
R301	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R302	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R303	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R304	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R305	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R306	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R307	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R308	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R311	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R312	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R313	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R314	QRSA08J-682YN	RESISTOR	6.8KΩ,1/10W
R315	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R316	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R317	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R318	QRSA08J-682YN	RESISTOR	6.8KΩ,1/10W
R319	QRSA08J-182YN	RESISTOR	1.8KΩ,1/10W
R320	QRSA08J-682YN	RESISTOR	6.8KΩ,1/10W
R324	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R328	QRSA08J-393YN	RESISTOR	39KΩ,1/10W
R329	QRSA08J-123YN	RESISTOR	12KΩ,1/10W
R330	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R331	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
R332	QRSA08J-271YN	RESISTOR	270Ω,1/10W
R333	QRSA08J-153YN	RESISTOR	15KΩ,1/10W
R334	QRSA08J-821YN	RESISTOR	820Ω,1/10W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R335	QRSA08J-223YN	RESISTOR	22KΩ,1/10W
R336	QRSA08J-680YN	RESISTOR	68Ω,1/10W
R337	QRSA08J-274YN	RESISTOR	270KΩ,1/10W
R338	QRSA08J-822YN	RESISTOR	8.2KΩ,1/10W
R339	QRSA08J-682YN	RESISTOR	6.8KΩ,1/10W
R340	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R341	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
R342	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R343	QRSA08J-153YN	RESISTOR	15KΩ,1/10W
R344	QRSA08J-153YN	RESISTOR	15KΩ,1/10W
R346	QRSA08J-100YN	RESISTOR	10Ω,1/10W
R347	QRSA08J-393YN	RESISTOR	39KΩ,1/10W
R348	QRSA08J-682YN	RESISTOR	6.8KΩ,1/10W
R349	QRSA08J-392YN	RESISTOR	3.9KΩ,1/10W
R350	QRSA08J-153YN	RESISTOR	15KΩ,1/10W
R351	QRSA08J-3R3YN	RESISTOR	3.3Ω,1/10W
R352	QRD161J-151	RESISTOR	150Ω,1/6W
R353	QRSA08J-473YN	RESISTOR	47KΩ,1/10W
R354	QRSA08J-183YN	RESISTOR	18KΩ,1/10W
R355	QRSA08J-473YN	RESISTOR	47KΩ,1/10W
R356	QRSA08J-273YN	RESISTOR	27KΩ,1/10W
R357	QRSA08J-473YN	RESISTOR	47KΩ,1/10W
R358	QRSA08J-183YN	RESISTOR	18KΩ,1/10W
R359	QRSA08J-271YN	RESISTOR	270Ω,1/10W
R360	QRSA08J-273YN	RESISTOR	27KΩ,1/10W
R361	QRSA08J-3R3YN	RESISTOR	3.3Ω,1/10W
R368	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R369	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
C301	QETF1EM-475	E CAPACITOR	4.7µF,25V
C302	QETF1EM-475	E CAPACITOR	4.7µF,25V
C303	QETF1CM-476	E CAPACITOR	47µF,16V
C304	QERF1CM-106	E CAPACITOR	10µF,16V
C305	QERF1CM-106	E CAPACITOR	10µF,16V
C306	QETF1CM-106	E CAPACITOR	10µF,16V
C307	QETF1CM-106	E CAPACITOR	10µF,16V
C308	QETF1HM-225	E CAPACITOR	2.2µF,50V
C309	QETF1HM-225	E CAPACITOR	2.2µF,50V
C310	QETF1HM-105	E CAPACITOR	1µF,50V
C311	QETF1HM-105	E CAPACITOR	1µF,50V
C312	QERF1CM-106	E CAPACITOR	10µF,16V
C313	QERF1CM-106	E CAPACITOR	10µF,16V
C318	QCYA1HK-222	CAPACITOR	0.0022µF,50V
C319	QETC1CM-476	E CAPACITOR	47µF,16V
C321	QETC1CM-106	E CAPACITOR	10µF,16V
C323	QCC11EJ-153	CAPACITOR	0.015µF,25V
C324	QETC1HM-105	E CAPACITOR	1µF,50V
C325	QCC11EJ-223	CAPACITOR	0.022µF,25V
C326	QCYA1HK-681	CAPACITOR	680pF,50V
C327	QEK61HM-475	E CAPACITOR	4.7µF,50V
C329	QETF1AM-226	E CAPACITOR	22µF,10V
C330	QCYA1HK-123	CAPACITOR	0.012µF,50V
C331	QCYA1HK-103	CAPACITOR	0.01µF,50V
C332	QETC1HM-104	E CAPACITOR	0.1µF,50V
C333	QCYA1HK-331	CAPACITOR	330pF,50V
C334	QFLC1HJ-333Z	M CAPACITOR	0.033µF,50V
C335	QETF1CM-106	E CAPACITOR	10µF,16V
C336	QCYA1HK-332	CAPACITOR	0.0033µF,50V
C337	QCYA1HK-103	CAPACITOR	0.01µF,50V
C338	QFLC1HJ-333Z	M CAPACITOR	0.033µF,50
C339	QEK61CM-106	E CAPACITOR	10µF,16
C340	QCYA1HK-332	CAPACITOR	0.0033µF,50
C341	QCYA1HK-103	CAPACITOR	0.01µF,50

‡⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C350	QCYA1HK-332	CAPACITOR	0.0033μF,50V
	L301	PELN0530-101JZ	COIL	100μH
	L302	PU58308-123J	COIL	12mH
⚠	T301	PELN0860	OSC TRANSFORMER	
⚠	T302	PELN0861	OSC TRANSFORMER	
	WR3	PW30504-03W2604	WIRE,(MAIN-CN305)	
	CN301	PEMC0714-011	CONNECTOR,(1-11)	
	CN302	PU59555-4	CONNECTOR,(1-4)	
	CN303	PU59555-2	CONNECTOR,(1-2)	
	CN304	PU59555-6	CONNECTOR,(1-6)	
	CN305	PU59555-3	CONNECTOR	

- SERVO SECTION -

‡⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	IC401	HD49780NT	IC	
	IC472	XRA10358F	IC	
	IC473	BU4011BF	IC	
	IC474	MC14161BF	IC	
		or UPD4161BGS	IC	
	Q472	DTC143TS	TRANSISTOR	
	D401	1SS133	DIODE	
	D402	1SS133	DIODE	
	D403	1SS133	DIODE	
	D477	1SS133	DIODE	
	R401	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
	R402	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
	R403	QRSA08J-105YN	RESISTOR	1MΩ,1/10W
	R404	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
	R405	QRSA08J-474YN	RESISTOR	470KΩ,1/10W
	R406	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
	R407	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
	R408	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
	R409	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
	R410	QRSA08J-683YN	RESISTOR	68KΩ,1/10W
	R411	QRSA08J-225YN	RESISTOR	2.2MΩ,1/10W
	R412	QRSA08J-473YN	RESISTOR	47KΩ,1/10W
	R413	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
	R414	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
	R415	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
	R416	QRSA08J-223YN	RESISTOR	22KΩ,1/10W
	R417	QRSA08J-223YN	RESISTOR	22KΩ,1/10W
	R418	QRSA08J-105YN	RESISTOR	1MΩ,1/10W
	R419	QRSA08J-273YN	RESISTOR	27KΩ,1/10W
	R421	QRSA08J-394YN	RESISTOR	390KΩ,1/10W
	R423	QRSA08J-105YN	RESISTOR	1MΩ,1/10W
	R424	QRSA08J-273YN	RESISTOR	27KΩ,1/10W
	R428	QRD161J-564	RESISTOR	560KΩ,1/6W
	R429	QRSA08J-273YN	RESISTOR	27KΩ,1/10W
	R430	QRSA08J-475YN	RESISTOR	4.7MΩ,1/10W
	R431	QRSA08J-474YN	RESISTOR	470KΩ,1/10W
	R432	QRD161J-822	RESISTOR	8.2KΩ,1/6W
	R436	QRD161J-102	RESISTOR	1KΩ,1/6W
	R438	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
	R440	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
	R485	QRSA08J-273YN	RESISTOR	27KΩ,1/10W
	C401	QCYA1HK-102	CAPACITOR	0.001μF,50V
	C402	QERF1AM-226	E CAPACITOR	22μF,10V
	C403	QERF1AM-226	E CAPACITOR	22μF,10V
	C404	QCSA1HJ-181	CAPACITOR	180pF,50V
	C405	QCYA1HK-102	CAPACITOR	0.001μF,50V
	C406	PECA0780-223Z	M CAPACITOR	
	C407	QCYA1HK-102	CAPACITOR	0.001μF,50V
	C408	PECA0780-563Z	M CAPACITOR	
	C409	QCYA1HK-102	CAPACITOR	0.001μF,50V
	C410	QCYA1EK-103	CAPACITOR	0.01μF,25V
	C411	QCYA1EK-103	CAPACITOR	0.01μF,25V
	C412	QERF1CM-106	E CAPACITOR	10μF,16V
	C413	PECA0780-224Z	M CAPACITOR	
	C414	QCC31CK-223	CAPACITOR	0.022μF,16V
	C415	QERF1EM-475	E CAPACITOR	4.7μF,25V
	C416	QERF1EM-475	E CAPACITOR	4.7μF,25V
	C417	QERF1CM-106	E CAPACITOR	10μF,16V
	C418	QERF1CM-106	E CAPACITOR	10μF,16V
	C419	QCC31CK-153	CAPACITOR	0.015μF,16V
	C420	PECA0780-124Z	M CAPACITOR	
	C421	QCSA1HJ-471	CAPACITOR	470pF,50V
	CN401	PU59555-3	CONNECTOR	
	CN402	PEMC0915-004	FFC CONNECTOR	
⚠	CP401	ICP-N15	CIRCUIT PROTECTOR	

- SYSTEM CONTROL SECTION -

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	IC601	HD6433927A36F	QFP IC (MCU)	
	IC602	CAT35C104P-041	IC	
	IC603	S-80728AN-DR-X	IC	
		or RH5VA28AA-XE	IC	
	IC604	M50255P	IC	
	Q601	DTC124EF	TRANSISTOR	
	Q602	DTC124ES	TRANSISTOR	
	Q603	DTC124EF	TRANSISTOR	
	Q604	2SC1740S(RS)	TRANSISTOR	
		or 2SC3199(GB)-TJK	TRANSISTOR	
		or 2SC3311A(RS)	TRANSISTOR	
		or 2SC536SPA(FG)	TRANSISTOR	
	Q605	DTC124ES	TRANSISTOR	
	Q606	DTC124EF	TRANSISTOR	
	Q607	DTC114TF	TRANSISTOR	
	Q608	2SB1256	TRANSISTOR	
	Q609	DTC124EF	TRANSISTOR	
	Q610	DTC114WS	TRANSISTOR	
	Q611	DTC124EF	TRANSISTOR	
	D603	11ES2	DIODE	
	D604	11ES2	DIODE	
	D605	1SS133	DIODE	
	D606	1SS133	DIODE	
	D607	1SS133	DIODE	
	D608	11ES2	DIODE	
	D609	11ES2	DIODE	
	D610	1SS133	DIODE	
	D613	1SS133	DIODE	
	R601	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
	R602	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
	R603	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
	R604	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
	R605	QRSA08J-105YN	RESISTOR	1MΩ,1/10W
	R606	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R607	QRD161J-102	RESISTOR	1KΩ,1/6W
	R608	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
	R609	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
	R610	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
	R611	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
	R612	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
	R613	QRD161J-102	RESISTOR	1KΩ,1/6W
	R614	QRD161J-472	RESISTOR	4.7KΩ,1/6W

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R615	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R616	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R617	QRD161J-0R0	RESISTOR	0Ω,1/6W
	R618	QRD161J-102	RESISTOR	1KΩ,1/6W
	R619	QRD161J-102	RESISTOR	1KΩ,1/6W
	R620	QRD161J-102	RESISTOR	1KΩ,1/6W
	R621	QRD161J-102	RESISTOR	1KΩ,1/6W
	R622	QRSA08J-681YN	RESISTOR	680Ω,1/10W
	R623	QRD161J-102	RESISTOR	1KΩ,1/6W
	R624	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R625	QRD161J-152	RESISTOR	1.5KΩ,1/6W
	R626	QRD161J-681	RESISTOR	680Ω,1/6W
	R627	QRD161J-0R0	RESISTOR	0Ω,1/6W
	R628	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
	R629	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
	R630	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
	R631	QRSA08J-471YN	RESISTOR	470Ω,1/10W
	R632	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
	R633	QRD161J-102	RESISTOR	1KΩ,1/6W
	R634	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R635	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R636	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R637	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R638	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R639	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
	R640	QRD161J-102	RESISTOR	1KΩ,1/6W
	R641	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R642	QRD161J-102	RESISTOR	1KΩ,1/6W
	R643	QRD161J-271	RESISTOR	270Ω,1/6W
	R644	QRD161J-271	RESISTOR	270Ω,1/6W
	R645	QRD161J-102	RESISTOR	1KΩ,1/6W
	R646	QRD161J-332	RESISTOR	3.3KΩ,1/6W
	R647	QRD161J-332	RESISTOR	3.3KΩ,1/6W
	R648	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
	R649	QRD161J-102	RESISTOR	1KΩ,1/6W
	R650	QRD161J-102	RESISTOR	1KΩ,1/6W
	R651	QRD161J-102	RESISTOR	1KΩ,1/6W
	R652	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R653	QRD161J-102	RESISTOR	1KΩ,1/6W
	R654	QRD161J-272	RESISTOR	2.7KΩ,1/6W
	R655	QRD161J-102	RESISTOR	1KΩ,1/6W
	R656	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R657	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R658	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
	R659	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R660	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R661	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
	R662	QRSA08J-683YN	RESISTOR	68KΩ,1/10W
	R663	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
	R664	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
	R665	QRD161J-102	RESISTOR	1KΩ,1/6W
	R666	QRSA08J-224YN	RESISTOR	220KΩ,1/10W
	R667	QRSA08J-303YN	RESISTOR	30KΩ,1/10W
	R668	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
	R669	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
	R670	QRSA08J-563YN	RESISTOR	56KΩ,1/10W
	R671	QRSA08J-333YN	RESISTOR	33KΩ,1/10W
	R672	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
	R673	QRD161J-0R0	RESISTOR	0Ω,1/6W
	R674	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R675	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
	R676	QRD161J-472	RESISTOR	4.7KΩ,1/6W

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R677	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
	R678	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
	R679	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
	R680	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
	R681	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
	R682	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R683	QRD161J-104	RESISTOR	100KΩ,1/6W
	R684	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
	R685	QRD161J-104	RESISTOR	100KΩ,1/6W
	R687	QRD161J-104	RESISTOR	100KΩ,1/6W
	R689	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
	C601	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C602	QERF1CM-106	E CAPACITOR	10μF,16V
	C603	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C604	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C605	QERF0JM-107	E CAPACITOR	100μF,6.3V
	C606	QERF0JM-336	E CAPACITOR	33μF,6.3V
	C607	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C608	QERF0JM-227	E CAPACITOR	220μF,6.3V
	C618	QCSA1HJ-270	CAPACITOR	27pF,50V
	C619	QAT3120-450	TRIM CAPACITOR,TIMER CLOCK	45pF
	C622	QCC11EK-104	CAPACITOR	0.1μF,25V
	C625	QCBB1HJ-271	CAPACITOR	270pF,50V
	L601	PELN0530-101JZ	COIL	100μH
⚠	CF601	PEVB0497	RESONATOR	
⚠	X601	PEVB0422	CRYSTAL RESONATOR	
⚠	TH601	PESC1089-Z	POSI THERMISTOR	
	WR4	PW30504-04W4409	WIRE,(MAIN-CN604)	
	CN601	PEMC0915-016	FFC CONNECTOR	
	CN602	PU59555-3	CONNECTOR,(1-3)	
	CN603	PU59555-4	CONNECTOR,(1-4)	
	CN604	PU59555-4	CONNECTOR,(1-4)	
	CN802	PEMC0915-009	FFC CONNECTOR	
⚠	CP601	ICP-F25	CIRCUIT PROTECTOR	

– REGULATOR SECTION –

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	IC801	UPC2405HF	IC	
	Q801	2SD2375(QP)	TRANSISTOR	
	Q802	2SD2375(QP)	TRANSISTOR	
	Q803	2SB1068(KU)	TRANSISTOR	
	D801	RD13ES-T1B2	ZENER DIODE	
	D802	HZ15CP	ZENER DIODE	
	D803	RD6.2ES-T1B1	ZENER DIODE	
	D804	11ES2	DIODE	
	R801	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
	R802	QRD161J-121	RESISTOR	120Ω,1/6W
	R803	QRD161J-102	RESISTOR	1KΩ,1/6W
	R804	QRD161J-101	RESISTOR	100Ω,1/6W
	R805	QRD161J-103	RESISTOR	10KΩ,1/6W
	R806	QRG02DJ-102X	OMF RESISTOR	1KΩ,2W
	R807	QRD161J-102	RESISTOR	1KΩ,1/6W
	C801	QFLA1HJ-103Z	M CAPACITOR	0.01μF,50V
	C802	QETC0JM-107	E CAPACITOR	100μF,6.3V
	C803	QETC1AM-226	E CAPACITOR	22μF,10V
	C804	QETC0JM-107	E CAPACITOR	100μF,6.3V
	C805	QETF1CM-226	E CAPACITOR	22μF,16V
	C806	QETC1CM-107	E CAPACITOR	100μF,16V
	C807	QETC1CM-107	E CAPACITOR	100μF,16V
	HS1	PQ46176	HEAT SINK	
	SCW1	SDSG3006Z	SCREW,X3 HEAT SINK	
	WR5	PW30218-0335814	WIRE,(MAIN-CN803)	

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	CN801	PEMC0974	B TO B CONNECTOR	
	CN803	PU59555-3	CONNECTOR,(1-3)	
⚠	CP801	ICP-N20	CIRCUIT PROTECTOR	
⚠	CP802	ICP-N20	CIRCUIT PROTECTOR	

- RF SW SECTION -

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	Q701	2SB810H,J	TRANSISTOR	
	D701	1SS133	DIODE	
	D702	1SS133	DIODE	
	D703	1SS133	DIODE	
	R701	QRSA08J-393YN	RESISTOR	39KΩ,1/10W
	R702	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
	C701	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	L701	PU48530-100K	COIL	10μH
	L702	PU48530-100K	COIL	10μH
	CN701	PEMC0714-013	CONNECTOR	

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VIDEO UNIT BOARD ASSEMBLY <05>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PWBA1	PB10745D-01	VIDEO UNIT BOARD ASSEMBLY	
	IC1	TL8839P	IC	
	IC2	JCP0035	IC	
	Q1	2SA1576(QRS)	TRANSISTOR	
	Q2	2SC4081(QRS)	TRANSISTOR	
	Q3	2SA1576(QRS)	TRANSISTOR	
	Q4	2SC4081(QRS)	TRANSISTOR	
	Q5	2SC4081(QRS)	TRANSISTOR	
	Q6	2SC4081(QRS)	TRANSISTOR	
	Q7	2SC4081(QRS)	TRANSISTOR	
	Q8	DTC114WU	TRANSISTOR	
	Q9	2SC4081(QRS)	TRANSISTOR	
	Q10	2SA1576(QRS)	TRANSISTOR	
	Q11	DTC144WU	TRANSISTOR	
	Q12	DTC144WU	TRANSISTOR	
	Q13	DTA124EU	TRANSISTOR	
	Q14	2SA1576(QRS)	TRANSISTOR	
	Q15	2SC4081(QRS)	TRANSISTOR	
	D1	1SS133	DIODE	
	D2	1SS133	DIODE	
	D3	1SS133	DIODE	
	D4	1SS133	DIODE	
	D5	1SS133	DIODE	
	D7	1SS292	DIODE	
	R1	NRSA63J-681N	RESISTOR	680Ω,1/16W
	R2	NRSA63J-475N	RESISTOR	4.7MΩ,1/16W
	R3	NRSA63J-361N	RESISTOR	360Ω,1/16W
	R4	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R5	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R6	NRSA63J-475N	RESISTOR	4.7MΩ,1/16W
	R7	NRSA63J-681N	RESISTOR	680Ω,1/16W
	R8	QRS188J-102YN	RESISTOR	1KΩ,1/8W
	R9	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R10	NRSA63J-621N	RESISTOR	620Ω,1/16W
	R11	NRSA63J-331N	RESISTOR	330Ω,1/16W
	R12	NRSA63J-182N	RESISTOR	1.8KΩ,1/16W
	R13	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R14	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R15	NRSA63J-221N	RESISTOR	220Ω,1/16W
	R16	NRSA63J-332N	RESISTOR	3.3KΩ,1/16W
	R17	NRSA63J-392N	RESISTOR	3.9KΩ,1/16W
	R18	NVP1301-152N	V RESISTOR,N C BALANCE	
	R19	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
	R20	NRSA63J-681N	RESISTOR	680Ω,1/16W
	R21	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R22	NRSA63J-122N	RESISTOR	1.2KΩ,1/16W
	R23	NRSA63J-272N	RESISTOR	2.7KΩ,1/16W
	R24	NRSA63J-821N	RESISTOR	820Ω,1/16W
	R25	NVP1301-472N	V RESISTOR,PB Y LEVEL	
	R26	NRSA63J-333N	RESISTOR	33KΩ,1/16W
	R27	NRSA63J-561N	RESISTOR	560Ω,1/16W
	R28	NVP1301-223N	V RESISTOR,CARRIER	
	R29	NVP1301-103N	V RESISTOR,DEVIATION	
	R30	NRSA63J-432N	RESISTOR	4.3KΩ,1/16W
	R31	NRSA63J-122N	RESISTOR	1.2KΩ,1/16W
	R32	NRSA63J-562N	RESISTOR	5.6KΩ,1/16W
	R33	NRSA63J-561N	RESISTOR	560Ω,1/16W
	R34	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R35	NRSA63J-272N	RESISTOR	2.7KΩ,1/16W
	R36	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R37	NRSA63G-511N	RESISTOR	510Ω,1/16W
	R38	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R39	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R40	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R41	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R42	NVP1301-153N	V RESISTOR,EE Y LEVEL	
	R43	NRSA63J-823N	RESISTOR	82KΩ,1/16W
	R44	NRSA63J-334N	RESISTOR	330KΩ,1/16W
	R45	NVP1301-103N	V RESISTOR,W/D CLIP	
	R46	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R47	NRSA63J-434N	RESISTOR	430KΩ,1/16W
	R48	NRSA63J-562N	RESISTOR	5.6KΩ,1/16W
	R49	NRSA63J-105N	RESISTOR	1MΩ,1/16W
	R50	NRSA63J-331N	RESISTOR	330Ω,1/16W
	R51	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R52	NVP1301-222N	V RESISTOR,REC COLOR LEVEL	
	R53	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R54	NRSA63J-271N	RESISTOR	270Ω,1/16W
	R55	NRSA63J-333N	RESISTOR	33KΩ,1/16W
	R56	NRSA63J-333N	RESISTOR	33KΩ,1/16W
	R57	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R58	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R59	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R60	NRSA63J-132N	RESISTOR	1.3KΩ,1/16W
	C1	NCS31HJ-221A	CAPACITOR	220pF,50V
	C2	NCS31HG-561A	CAPACITOR	560pF,50V
	C3	NCS31HG-361A	CAPACITOR	360pF,50V
	C4	NCS31HJ-220A	CAPACITOR	22pF,50V
	C5	NCF31HZ-103A	CAPACITOR	0.01μF,50V
	C6	NCS31HJ-150A	CAPACITOR	15pF,50V
	C7	NCS31HJ-220A	CAPACITOR	22pF,50V
	C8	NCS31HJ-680A	CAPACITOR	68pF,50V
	C9	NCS31HG-121A	CAPACITOR	120pF,50V
	C10	NCF31HZ-103A	CAPACITOR	0.01μF,50V
	C11	NCF31CZ-473A	CAPACITOR	0.047μF,16V
	C12	QETC1HM-474	E CAPACITOR	0.47μF,50V
	C13	QCVB1CN-103	CAPACITOR	0.01μF,16V
	C14	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C15	NCF31CZ-104A	CAPACITOR	0.1μF,16V

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C16	NCS31HJ-390A	CAPACITOR	39pF,50V
	C17	NCS31HJ-180A	CAPACITOR	18pF,50V
	C18	NCS31HJ-200A	CAPACITOR	20pF,50V
	C19	QETC0JM-476	E CAPACITOR	47μF,6.3V
	C20	NCF31HZ-103A	CAPACITOR	0.01μF,50V
	C21	NCS31HJ-330A	CAPACITOR	33pF,50V
	C22	QETC1HM-474	E CAPACITOR	0.47μF,50V
	C24	QETC1EM-475	E CAPACITOR	4.7μF,25V
	C25	QETC1CM-106	E CAPACITOR	10μF,16V
	C26	QETC1AM-226	E CAPACITOR	22μF,10V
	C27	QETC1CM-106	E CAPACITOR	10μF,16V
	C28	QETC0JM-107	E CAPACITOR	100μF,6.3V
	C29	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C30	NCF31HZ-103A	CAPACITOR	0.01μF,50V
	C31	NCF31HZ-103A	CAPACITOR	0.01μF,50V
	C32	QETC1HM-225	E CAPACITOR	2.2μF,50V
	C33	QETC1HM-474	E CAPACITOR	0.47μF,50V
	C34	NCS31HJ-620A	CAPACITOR	62pF,50V
	C35	NCS31HG-201A	CAPACITOR	200pF,50V
	C36	QETC1EM-475	E CAPACITOR	4.7μF,25V
	C37	NCB31EK-223A	CAPACITOR	0.022μF,25V
	C38	NCS31HG-130A	CAPACITOR	13pF,50V
	C39	NCF31HZ-103A	CAPACITOR	0.01μF,50V
	C40	QETC1HM-105	E CAPACITOR	1μF,50V
	C41	NCB31EK-223A	CAPACITOR	0.022μF,25V
	C42	NCS31HJ-101A	CAPACITOR	100pF,50V
	C43	NCS31HJ-390A	CAPACITOR	39pF,50V
	C44	QENC1EM-475	NP E CAPACITOR	4.7μF,25V
	C45	QETC1EM-475	E CAPACITOR	4.7μF,25V
	C46	NCF31CZ-473A	CAPACITOR	0.047μF,16V
	C47	QETC1HM-104	E CAPACITOR	0.1μF,50V
	C48	QETC1HM-474	E CAPACITOR	0.47μF,50V
	C49	NCB31CK-333A	CAPACITOR	0.033μF,16V
	C50	NCF31HZ-103A	CAPACITOR	0.01μF,50V
	C51	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C52	NCF31HZ-103A	CAPACITOR	0.01μF,50V
	C53	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C54	NCB31CK-473A	CAPACITOR	0.047μF,16V
	C55	QETC1EM-475	E CAPACITOR	4.7μF,25V
	C56	NCS31HJ-5R0A	CAPACITOR	5pF,50V
	C57	QETC1HM-105	E CAPACITOR	1μF,50V
	C58	NCF31HZ-103A	CAPACITOR	0.01μF,50V
	C59	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C60	QETC0JM-107	E CAPACITOR	100μF,6.3V
	C61	NCB31HK-103A	CAPACITOR	0.01μF,50V
	C62	NCB31HK-182A	CAPACITOR	0.0018μF,50V
	C63	NCS31HJ-300A	CAPACITOR	30pF,50V
	C64	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C65	NCB31CK-473A	CAPACITOR	0.047μF,16V
	C67	QCSB1HJ-390	CAPACITOR	39pF,50V
	C69	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C70	NCF31HZ-103A	CAPACITOR	0.01μF,50V
	C71	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	L1	PU59152-121J	COIL	120μH
	L2	PU59152-330J	COIL	33μH
	L3	PU59152-330J	COIL	33μH
	L4	PU59152-820J	COIL	82μH
	L5	PU59152-221J	COIL	220μH
	L6	PU59153-101K	COIL	100μH
	L7	PU59152-680J	COIL	68μH
	L8	PU48530-101K	COIL	100μH
	L9	PU59152-121J	COIL	120μH

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	L10	PU59152-150J	COIL	15μH
	L11	PU48530-561J	COIL	560μH
	L12	PU59152-680J	COIL	68μH
	LPF1	PELN0477	LOW PASS FILTER	
	LPF2	PELN0856	LOW PASS FILTER	
	DL1	PEVB0515	COMB FILTER	
⚠	X1	PEVB0386	CRYSTAL RESONATOR	
	K1	PU60281-4	FERRATE BEADS	
	K2	PU60281-4	FERRATE BEADS	
	CN1	PEMC0712-111	PIN HEADER	
	CN2	PEMC0712-112	PIN HEADER	
	CN3	PEMC0712-111	PIN HEADER	

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TERMINAL BOARD ASSEMBLY <06>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PWBA1	PB10775A-01	TERMINAL BOARD ASSEMBLY	
	IC1	XRA15218	IC	
		or BA15218	IC	
	IC2	XRU4053BC	IC	
		or BU4053BC	IC	
		or MC14053BCP	IC	
	IC3	XRU4052BC	IC	
		or MC14052BCP	IC	
		or BU4052BC	IC	
	IC4	XRA15218	IC	
		or BA15218	IC	
	IC5	XRA15218N	IC	
		or BA15218N	IC	
	Q1	2SC1740S(RS)	TRANSISTOR	
		or 2SC3199(GB)-TJK	TRANSISTOR	
	Q2	2SC1740S(RS)	TRANSISTOR	
		or 2SC3199(GB)-TJK	TRANSISTOR	
	Q3	DTA114ES	TRANSISTOR	
	Q701	2SA933S(RS)	TRANSISTOR	
	R1	QRD161J-101	RESISTOR	100Ω,1/6W
	R2	QRD161J-101	RESISTOR	100Ω,1/6W
	R3	QRD161J-101	RESISTOR	100Ω,1/6W
	R4	QRD161J-101	RESISTOR	100Ω,1/6W
	R5	QRD161J-101	RESISTOR	100Ω,1/6W
	R6	QRSA08J-101YN	RESISTOR	100Ω,1/10W
	R7	QRSA08J-223YN	RESISTOR	22KΩ,1/10W
	R8	QRD161J-223	RESISTOR	22KΩ,1/6W
	R9	QRSA08J-223YN	RESISTOR	22KΩ,1/10W
	R10	QRSA08J-203YN	RESISTOR	20KΩ,1/10W
	R11	QRSA08J-203YN	RESISTOR	20KΩ,1/10W
	R12	QRSA08J-203YN	RESISTOR	20KΩ,1/10W
	R13	QRD161J-203	RESISTOR	20KΩ,1/6W
	R14	QRD161J-473	RESISTOR	47KΩ,1/6W
	R15	QRSA08J-473YN	RESISTOR	47KΩ,1/10W
	R16	QRD161J-473	RESISTOR	47KΩ,1/6W
	R17	QRD161J-473	RESISTOR	47KΩ,1/6W
	R18	QRD161J-104	RESISTOR	100KΩ,1/6W
	R19	QRD161J-104	RESISTOR	100KΩ,1/6W
	R20	QRD161J-473	RESISTOR	47KΩ,1/6W
	R21	QRD161J-473	RESISTOR	47KΩ,1/6W
	R22	QRD161J-473	RESISTOR	47KΩ,1/6W
	R23	QRD161J-473	RESISTOR	47KΩ,1/6W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R24	QRSA08J-203YN	RESISTOR	20KΩ,1/10W
R25	QRSA08J-203YN	RESISTOR	20KΩ,1/10W
R26	QRSA08J-203YN	RESISTOR	20KΩ,1/10W
R27	QRSA08J-203YN	RESISTOR	20KΩ,1/10W
R28	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
R29	QRD161J-331	RESISTOR	330Ω,1/6W
R30	QRSA08J-331YN	RESISTOR	330Ω,1/10W
R31	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R32	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
R33	QRD161J-562	RESISTOR	5.6KΩ,1/6W
R34	QRD161J-562	RESISTOR	5.6KΩ,1/6W
R35	QRD161J-122	RESISTOR	1.2KΩ,1/6W
R36	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R37	QRD161J-331	RESISTOR	330Ω,1/6W
R38	QRD161J-331	RESISTOR	330Ω,1/6W
R39	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
R51	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R52	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R53	QRD161J-103	RESISTOR	10KΩ,1/6W
R701	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R706	QRG01DJ-331X	OMF RESISTOR	330Ω,1W
C1	QCYA1HK-102	CAPACITOR	0.001μF,50V
C2	QCYA1HK-102	CAPACITOR	0.001μF,50V
C3	QCYA1HK-102	CAPACITOR	0.001μF,50V
C4	QCYA1HK-102	CAPACITOR	0.001μF,50V
C5	QCYA1HK-561	CAPACITOR	560pF,50V
C6	QCYA1HK-561	CAPACITOR	560pF,50V
C7	QCYA1HK-561	CAPACITOR	560pF,50V
C8	QCYA1HK-561	CAPACITOR	560pF,50V
C9	QCYA1HK-561	CAPACITOR	560pF,50V
C10	QCYA1HK-561	CAPACITOR	560pF,50V
C11	QETC1AM-476	E CAPACITOR	47μF,10V
C12	QETC1AM-476	E CAPACITOR	47μF,10V
C19	QETC1HM-105	E CAPACITOR	1μF,50V
C20	QETC1HM-105	E CAPACITOR	1μF,50V
C21	QETC1EM-476	E CAPACITOR	47μF,25V
C22	QETC1AM-476	E CAPACITOR	47μF,10V
C26	QETC1AM-476	E CAPACITOR	47μF,10V
C27	QETC1AM-476	E CAPACITOR	47μF,10V
L1	PU59152-3R3J	COIL	3.3μH
L2	PU59152-3R3J	COIL	3.3μH
L3	PU59152-3R3J	COIL	3.3μH
L4	PU59152-3R3J	COIL	3.3μH
L5	PU59152-3R3J	COIL	3.3μH
L6	PU59152-3R3J	COIL	3.3μH
L7	PU59152-3R3J	COIL	3.3μH
L8	PU59152-3R3J	COIL	3.3μH
L9	PU59152-3R3J	COIL	3.3μH
L10	PU59152-3R3J	COIL	3.3μH
L11	PU59152-3R3J	COIL	3.3μH
L12	PU59152-3R3J	COIL	3.3μH
L13	PU59152-3R3J	COIL	3.3μH
S701	PU57908	SLIDE SWITCH,INPUT(L)	
K9	PU60281-5	FERRATE BEADS	
JA1	PEMC1009-03	PIN JACK,L OUT RCA	
JA2	PEMC1009-02	PIN JACK,R OUT RCA	
JA3	PEMC1010-03	PIN JACK(SW),L IN RCA	
JA4	PEMC1010-02	PIN JACK(SW),R IN RCA	
JA701	PEMC1019	RGB21PIN SOCKET,PERI-1	
JA702	PEMC1019	RGB21PIN SOCKET	
CN1	PEMC0713-111	HOUSING	
CN2	PU59555-103	CONNECTOR	
CN701	PEMC0713-113	HOUSING,VIDEO IN/OUT	

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AUDIO UNIT BOARD ASSEMBLY <09>

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PWBA	PB10716B	AUDIO UNIT BOARD ASSEMBLY	
IC1	JCP0038	IC	
Q1	2SC4081(R)	TRANSISTOR	
Q2	2SC4081(R)	TRANSISTOR	
R1	NRSA63J-475N	RESISTOR	4.7MΩ,1/16W
R2	NRSA63J-511N	RESISTOR	510Ω,1/16W
R3	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R4	NRSA63J-513N	RESISTOR	51KΩ,1/16W
R5	NVP1301-333NU	V RESISTOR,L DEVIATION	
R8	NRSA63J-822N	RESISTOR	8.2KΩ,1/16W
R9	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R10	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R11	NVP1301-153NZ	V RESISTOR,L CARRIER	
R12	NRSA63J-105N	RESISTOR	1MΩ,1/16W
R13	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R14	NRSA63J-183N	RESISTOR	18KΩ,1/16W
R18	NRSA63J-303N	RESISTOR	30KΩ,1/16W
R19	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R20	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R22	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R23	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R24	NRSA63J-752N	RESISTOR	7.5KΩ,1/16W
R25	NVP1301-153NZ	V RESISTOR,R CARRIER	
R26	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R27	NRSA63J-822N	RESISTOR	8.2KΩ,1/16W
R30	NVP1301-333NU	V RESISTOR,R DEVIATION	
R31	NRSA63J-513N	RESISTOR	51KΩ,1/16W
R32	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R33	NRSA63J-511N	RESISTOR	510Ω,1/16W
R34	NRSA63J-475N	RESISTOR	4.7MΩ,1/16W
R35	NRSA63J-514N	RESISTOR	510KΩ,1/16W
R36	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R38	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R41	NRSA63J-101N	RESISTOR	100Ω,1/16W
R42	NRSA63J-101N	RESISTOR	100Ω,1/16W
R43	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R44	NRSA63J-154N	RESISTOR	150KΩ,1/16W
R45	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R46	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R47	NRSA63J-154N	RESISTOR	150KΩ,1/16W
R48	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R49	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R50	NRSA63J-473N	RESISTOR	47KΩ,1/16W
R51	NRSA63J-473N	RESISTOR	47KΩ,1/16W
R52	NRSA63J-104N	RESISTOR	100KΩ,1/16W
R56	NRSA63J-101N	RESISTOR	100Ω,1/16W
R57	NRSA63J-101N	RESISTOR	100Ω,1/16W
C2	QETC1AM-336	E CAPACITOR	33μF,10V
C3	QFLC1HJ-473Z	M CAPACITOR	0.047μF,50V
C4	QETC1HM-225	E CAPACITOR	2.2μF,50V
C5	QFV21HJ-333	F CAPACITOR	0.033μF,50V
C6	QETC1AM-476	E CAPACITOR	47μF,10V
C7	QETC1CM-106	E CAPACITOR	10μF,16V

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
C8	QFLC1HJ-103Z	M CAPACITOR	0.01μF,50V
C9	QETC0JM-107	E CAPACITOR	100μF,6.3V
C10	NCB31HK-102A	CAPACITOR	0.001μF,50V
C11	QFLC1HJ-104Z	M CAPACITOR	0.1μF,50V
C12	QFLC1HJ-223Z	M CAPACITOR	0.022μF,50V
C13	NCB31HK-821A	CAPACITOR	820pF,50V
C14	QFLC1HJ-392Z	M CAPACITOR	0.0039μF,50V
C15	QFLC1HJ-333Z	M CAPACITOR	0.033μF,50V
C16	QETC1HM-105	E CAPACITOR	1μF,50V
C18	NCB31HK-561A	CAPACITOR	560pF,50V
C20	NCS31HJ-101A	CAPACITOR	100pF,50V
C21	NCS31HJ-101A	CAPACITOR	100pF,50V
C22	QFLC1HJ-392Z	M CAPACITOR	0.0039μF,50V
C23	NCB31HK-821A	CAPACITOR	820pF,50V
C24	QFLC1HJ-223Z	M CAPACITOR	0.022μF,50V
C25	QFLC1HJ-104Z	M CAPACITOR	0.1μF,50V
C26	NCB31HK-102A	CAPACITOR	0.001μF,50V
C27	QETC0JM-107	E CAPACITOR	100μF,6.3V
C28	QFLC1HJ-103Z	M CAPACITOR	0.01μF,50V
C29	QETC1CM-106	E CAPACITOR	10μF,16V
C30	QETC1AM-476	E CAPACITOR	47μF,10V
C31	QFLC1HJ-333Z	M CAPACITOR	0.033μF,50V
C32	QETC1HM-225	E CAPACITOR	2.2μF,50V
C33	QFLC1HJ-473Z	M CAPACITOR	0.047μF,50V
C34	QETC1AM-336	E CAPACITOR	33μF,10V
C36	QETC1CM-106	E CAPACITOR	10μF,16V
C38	QETC1CM-226	E CAPACITOR	22μF,16V
C39	QETC1CM-106	E CAPACITOR	10μF,16V
C40	QETC1HM-104	E CAPACITOR	0.1μF,50V
C41	QETC0JM-107	E CAPACITOR	100μF,6.3V
C42	QETC0JM-107	E CAPACITOR	100μF,6.3V
C43	QETC1AM-107	E CAPACITOR	100μF,10V
C44	QETC1CM-476	E CAPACITOR	47μF,16V
C45	QETC1AM-476	E CAPACITOR	47μF,10V
C46	QETC1CM-106	E CAPACITOR	10μF,16V
C47	NCB31EK-103A	CAPACITOR	0.01μF,25V
C48	QETC1CM-106	E CAPACITOR	10μF,16V
C49	QETC0JM-476	E CAPACITOR	47μF,6.3V
C50	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C51	QFV21HJ-563	F CAPACITOR	0.056μF,50V
C52	QFV21HJ-563	F CAPACITOR	0.056μF,50V
C53	QETC1HM-225	E CAPACITOR	2.2μF,50V
C54	QETC1CM-106	E CAPACITOR	10μF,16V
C55	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C56	QETC1HM-225	E CAPACITOR	2.2μF,50V
C57	QETC1CM-106	E CAPACITOR	10μF,16V
C58	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C60	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C61	NCF31CZ-104A	CAPACITOR	0.1μF,16V
L1	PELN0530-101JZ	COIL	100μH
L2	PELN0530-101JZ	COIL	100μH
L3	PELN0530-101JZ	COIL	100μH
BPF1	PU60610	BAND PASS FILTER(1.4MHZ)	
BPF2	PU60611	BAND PASS FILTER(1.8MHZ)	
JP1	PEMC0919-126	PIN HEADER	
JP2	PEMC0919-126	PIN HEADER	

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AUDIO/CONTROL HEAD BOARD ASSY <12>

#△ REF No.	PART No.	PART NAME, DESCRIPTION
PWB1	PB40046-01-02	AUDIO CONTROL HEAD BOARD
CN201	PU59555-104	CONNECTOR
CN202	PU59555-103	CONNECTOR

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DEMOD BOARD ASSEMBLY <14>

PWBA1	PB10679E	DEMODULATOR BOARD ASSEMBLY	
IC208	TDA8415	IC	
	or TDA8416	IC	
IC209	UPC1391H	IC	
Q206	FMA3	TRANSISTOR	
Q208	DTA114TU	TRANSISTOR	
Q209	2SA1532(C)	TRANSISTOR	
Q210	DTC114EU	TRANSISTOR	
Q211	2SD1450S,T	TRANSISTOR	
D201	DAP202U	DIODE	
R255	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R256	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R257	NRSA63J-101N	RESISTOR	100Ω,1/16W
R260	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R261	NRSA63J-272N	RESISTOR	2.7KΩ,1/16W
R262	NRSA63J-272N	RESISTOR	2.7KΩ,1/16W
R263	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R264	QVZ3518-103	V RESISTOR,SEPALATION	
R265	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R272	NRSA63J-391N	RESISTOR	390Ω,1/16W
R273	NRSA63J-271N	RESISTOR	270Ω,1/16W
R275	NRSA63J-561N	RESISTOR	560Ω,1/16W
R276	NRSA63J-471N	RESISTOR	470Ω,1/16W
R277	NRSA63J-331N	RESISTOR	330Ω,1/16W
C253	QEKF1HM-225	E CAPACITOR	2.2μF,50V
C254	QEKF1HM-225	E CAPACITOR	2.2μF,50V
C255	QEKF1CM-226	E CAPACITOR	22μF,16V
C257	NCF31HZ-473A	CAPACITOR	0.047μF,50V
C258	QETC1CM-226	E CAPACITOR	22μF,16V
C259	QCFA1CZ-224	CAPACITOR	0.22μF,16V
C260	QEKF1HM-225	E CAPACITOR	2.2μF,50V
C261	QEKF1HM-225	E CAPACITOR	2.2μF,50V
C264	QERF1CM-336	E CAPACITOR	33μF,16V
C265	QCYA1HK-473	CAPACITOR	0.047μF,50V
C266	NCT06CH-220A	CAPACITOR	22pF,50V
C267	QCYA1HK-473	CAPACITOR	0.047μF,50V
C268	QCYA1HK-473	CAPACITOR	0.047μF,50V
C269	QCYA1HK-473	CAPACITOR	0.047μF,50V
C270	QRD161J-332	RESISTOR	3.3KΩ,1/6W
C272	QEKF1CM-226	E CAPACITOR	22μF,16V
C273	QEKF1CM-226	E CAPACITOR	22μF,16V
C278	QCYA1HK-222	CAPACITOR	0.0022μF,50V
C295	NCB31HK-221A	CAPACITOR	220pF,50V
C296	NCB31HK-221A	CAPACITOR	220pF,50V
C307	NCF31HZ-473A	CAPACITOR	0.047μF,50V
CF201	PU52775	CERAMIC FILTER	
CF202	PU52775-2	CERAMIC FILTER	

#△	REF No.	PART No.	PART NAME, DESCRIPTION	
	CF203	PEVB0481	C DISCRIMINATER	
	LC204	PELN0662-Z	FERRATE BEADS	
	LC213	PU59152-4R7J	COIL	4.7μH
	LC214	PU59152-4R7J	COIL	4.7μH
	LC215	PU59152-4R7J	COIL	4.7μH
△	X202	PEVB0479	CRYSTAL RESONATOR	
	K206	PELN0662-Z	FERRATE BEADS	
	K207	PELN0662-Z	FERRATE BEADS	
	K209	PELN0662-Z	FERRATE BEADS	
	CN201	PU59555-3	CONNECTOR	
	CN202	PU59555-3	CONNECTOR	
	CN203	PU59555-4	CONNECTOR	
	CN204	PU59555-3	CONNECTOR	

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DISPLAY/SWITCH BOARD ASSEMBLY <28>

#△	REF No.	PART No.	PART NAME, DESCRIPTION	
	PWBA1	PB10779C1-01	DISP/SW BOARD ASSY,HR-J605EG	
	PWBA1	PB10779A1-01	DISP/SW BOARD ASSY,HR-J600EG	
	IC1	UPD16311GC(K)	IC	
		or UPD16311GC(E)	IC	
	IC2	GP1U801X	IR DETECT UNIT	
	D1	RD4.7ES-T1B2	ZENER DIODE	
	D2	1SS132	DIODE	
	D3	1SS132	DIODE	
	D4	1SS132	DIODE	
	D5	1SS132	DIODE	
	D6	1SS132	DIODE	
	D7	1SS132	DIODE	
	D8	SLH-34DC3F	LE DIODE,HYPER BASS	
	D9	11ES2	DIODE	
	D11	1SS132	DIODE	
	D19	1SS132	DIODE,VIDEO DISP	
	D21	1SS132	DIODE,VCR PLUS	
	R1	QRD161J-103	RESISTOR	10KΩ,1/6W
	R2	QRD161J-333	RESISTOR	33KΩ,1/6W
	R3	QRD161J-333	RESISTOR	33KΩ,1/6W
	R4	QRD161J-333	RESISTOR	33KΩ,1/6W
	R5	QRD161J-333	RESISTOR	33KΩ,1/6W
	R6	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R7	QRD161J-472	RESISTOR	4.7KΩ,1/6W
	R8	QRD161J-102	RESISTOR	1KΩ,1/6W
	R11	QRD161J-333	RESISTOR	33KΩ,1/6W
	R12	QRD161J-103	RESISTOR	10KΩ,1/6W
	R13	QRD161J-331	RESISTOR	330Ω,1/6W
	R14	QRD161J-151	RESISTOR	150Ω,1/6W
	R15	QRD161J-103	RESISTOR	10KΩ,1/6W
	R17	QRD161J-331	RESISTOR	330Ω,1/6W
	RA1	QRB045J-333XM	RESISTOR ARRAY	33KΩ,1/8W
	C1	QETC0JM-107	E CAPACITOR	100μF,6.3V
	C2	QETC1HM-106	E CAPACITOR	10μF,50V
	C3	QCFB1HZ-473	CAPACITOR	0.047μF,50V
	C4	QCFB1HZ-473	CAPACITOR	0.047μF,50V
	C5	QCSB1HJ-330	CAPACITOR	33pF,50V
	C7	QRD161J-0R0	RESISTOR	0Ω,1/6W
	C8	QCFB1HZ-104	CAPACITOR	0.1μF,50V
	C9	QCSB1HJ-330	CAPACITOR	33pF,50V
	C10	QEK60JM-476	E CAPACITOR	47μF,6.3V
	C11	QCVB1CM-103	CAPACITOR	0.01μF,16V
	C12	QETC1AM-227	E CAPACITOR	220μF,10V
	L1	PU48530-101J	COIL	100μH
	S1	PESW0525-02Z	TACT SWITCH,CH+	
	S2	PESW0525-02Z	TACT SWITCH,REC	
	S3	PESW0525-02Z	TACT SWITCH,PAUSE	
	S4	PESW0525-02Z	TACT SWITCH,CH−	
	S5	PESW0525-02Z	TACT SWITCH,PLAY	
	S6	PESW0525-02Z	TACT SWITCH,STOP	
	S9	PESW0525-02Z	TACT SWITCH,SP/LP	
	S19	PESW0525-02Z	TACT SWITCH,MIX	
	S20	PESW0525-02Z	TACT SWITCH,HYPER BASS	
	S30	PESW0525-02Z	TACT SWITCH,A.DUB	
	S32	PESW0525-02Z	TACT SWITCH,TV/VIDEO	
	S34	PESW0525-02Z	TACT SWITCH,SIMUL	
	FDP1	PEDP0106	FLUORESCENT DISPLAY PANEL	
	HD1	PQM30038-2-2	LED HOLDER,D8	
	HD2	PQ31334-1-2	D.HOLDER (R)	
	HD3	PQ31333-1-2	D.HOLDER (L)	
	CN1	PEMC0915-109	FFC CONNECTOR,MAIN-DISP	
	CN2	PEMC0889-009	B TO B CONNECTOR,SW/JACK	

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SWITCH/JACK BOARD ASSEMBLY <36>

PWBA2	PB10779A2-01	SWITHCH/JACK BOARD ASSEMBLY	
D17	SLH-34VC3F	LE DIODE,OPERATE	
D101	1SS133	DIODE	
D102	1SS133	DIODE	
C101	QCBB1HJ-102	CAPACITOR	0.001μF,50V
C102	QCBB1HJ-102	CAPACITOR	0.001μF,50V
C110	PU60676-223	E CAPACITOR	0.022μF,5.5V
L101	PU59152-1R0J	COIL	1μH
L102	PU59152-1R0J	COIL	1μH
L103	PU59152-1R0J	COIL	1μH
S10	PESW0525-02Z	TACT SWITCH,CANCEL	
S11	PESW0525-02Z	TACT SWITCH,TIMER	
S12	PESW0525-02Z	TACT SWITCH,OPERATE	
S13	PESW0525-02Z	TACT SWITCH,START+	
S14	PESW0525-02Z	TACT SWITCH,START−	
S15	PESW0525-02Z	TACT SWITCH,STOP+	
S16	PESW0525-02Z	TACT SWITCH,STOP−	
CL1	PU59311-4	WIRE CLAMP	
HD1	PQ43214	LED HOLDER,D17	
JA101	PEMC1008	PIN JACK(SW),V-L-R IN	
JA102	PU60659	MINI JACK,R.PAUSE	
CN3	PEMC0825-009	B TO B CONNECTOR,DISP	
CN101	PU59555-2	CONNECTOR	
CN102	PU59555-3	CONNECTOR	
CN103	PU59555-3	CONNECTOR	

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PRE/REC AMP BOARD ASSEMBLY <43>

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PWBA1	PB10771B-01	PRE/REC BOARD ASSEMBLY	
IC501	AN3389SB-XE	IC	
IC1001	AN3380NK	IC	
Q503	2SC4081(QRS)	TRANSISTOR	
Q504	2SC4081(QRS)	TRANSISTOR	
Q505	2SA1576(QRS)	TRANSISTOR	
Q506	2SC4081(QRS)	TRANSISTOR	
Q507	2SC4081(QRS)	TRANSISTOR	
Q508	DTC144WU	TRANSISTOR	
Q512	DTC114WU	TRANSISTOR	
Q514	DTA124EU	TRANSISTOR	
Q1001	DTC124TU	CHIP D.TRANSISTOR	
Q1002	DTC124TU	CHIP D.TRANSISTOR	
Q1003	DTC124TU	CHIP D.TRANSISTOR	
Q1004	DTC114WU	TRANSISTOR	
D501	1SS133	DIODE	
D502	1SS133	DIODE	
D505	1SS133	DIODE	
D508	DAN202U	DIODE	
R501	QRSA08J-332YN	RESISTOR	3.3KΩ,1/10W
R509	QRSA08J-182YN	RESISTOR	1.8KΩ,1/10W
R510	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R514	QRSA08J-681YN	RESISTOR	680Ω,1/10W
R515	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R516	QRSA08J-751YN	RESISTOR	750Ω,1/10W
R517	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R518	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R519	QRSA08J-391YN	RESISTOR	390Ω,1/10W
R520	QRSA08J-391YN	RESISTOR	390Ω,1/10W
R521	QRSA08J-911YN	RESISTOR	910Ω,1/10W
R522	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R523	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R524	QRSA08J-821YN	RESISTOR	820Ω,1/10W
R525	QRSA08J-152YN	RESISTOR	1.5KΩ,1/10W
R526	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
R527	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R528	QRSA08J-122YN	RESISTOR	1.2KΩ,1/10W
R531	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R532	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R533	QRSA08J-272YN	RESISTOR	2.7KΩ,1/10W
R534	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R535	QRSA08J-123YN	RESISTOR	12KΩ,1/10W
R536	NRVA62D-433N	RESISTOR	43KΩ,1/16W
R539	QRD161J-334	RESISTOR	330KΩ,1/6W
R541	QRSA08J-271YN	RESISTOR	270Ω,1/10W
R542	QRSA08J-271YN	RESISTOR	270Ω,1/10W
R543	QRSA08J-301YN	RESISTOR	300Ω,1/10W
R544	QRSA08J-301YN	RESISTOR	300Ω,1/10W
R545	QRSA08J-561YN	RESISTOR	560Ω,1/10W
R548	QRSA08J-224YN	RESISTOR	220KΩ,1/10W
R550	QRSA08J-181YN	RESISTOR	180Ω,1/10W
R552	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R554	QRSA08J-331YN	RESISTOR	330Ω,1/10W
R570	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R571	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
R1001	QRSA08J-273YN	RESISTOR	27KΩ,1/10W
R1002	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R1003	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R1004	QRSA08J-274YN	RESISTOR	270KΩ,1/10W
R1005	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
R1006	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
R1007	QRSA08J-153YN	RESISTOR	15KΩ,1/10W
R1010	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R1011	QRD161J-102	RESISTOR	1KΩ,1/6W
R1012	QRSA08J-560YN	RESISTOR	56Ω,1/10W
R1013	QRSA08J-560YN	RESISTOR	56Ω,1/10W
C504	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C505	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C506	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C507	QCSA1HJ-331	CAPACITOR	330pF,50V
C508	QCSA1HJ-150	CAPACITOR	15pF,50V
C509	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C510	QCSA1HJ-330	CAPACITOR	33pF,50V
C511	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C512	QCSA1HJ-390	CAPACITOR	39pF,50V
C513	QCSA1HJ-471	CAPACITOR	470pF,50V
C514	QCSA1HJ-160	CAPACITOR	16pF,50V
C515	QCSA1HJ-7R0	CAPACITOR	7pF,50V
C516	QCC11CJ-104	CAPACITOR	0.1μF,16V
C517	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C518	QCSA1HJ-391	CAPACITOR	390pF,50V
C520	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C521	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C522	QFV11HJ-104	F CAPACITOR	0.1μF,50V
C523	QCYA1HK-333	CAPACITOR	0.033μF,50V
C524	QCSA1HJ-680	CAPACITOR	68pF,50V
C525	QCSA1HJ-560	CAPACITOR	56pF,50V
C526	QCYA1HK-333	CAPACITOR	0.033μF,50V
C527	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C528	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C529	QCYA1HK-333	CAPACITOR	0.033μF,50V
C530	QCSA1HJ-680	CAPACITOR	68pF,50V
C531	QCSA1HJ-560	CAPACITOR	56pF,50V
C532	QCYA1HK-333	CAPACITOR	0.033μF,50V
C533	QFV11HJ-104	F CAPACITOR	0.1μF,50V
C534	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C535	QCC11CJ-104	CAPACITOR	0.1μF,16V
C536	QER61CM-476	E CAPACITOR	47μF,16V
C537	QER60JM-476	E CAPACITOR	47μF,6.3V
C538	QCC11CJ-104	CAPACITOR	0.1μF,16V
C539	QFV11HJ-103	F CAPACITOR	0.01μF,50V
C540	QCSA1HJ-470	CAPACITOR	47pF,50V
C541	QCSA1HJ-390	CAPACITOR	39pF,50V
C543	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C545	QCVB1CN-103	CAPACITOR	0.01μF,16V
C549	QCFA1CZ-224	CAPACITOR	0.22μF,16V
C550	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C554	QCFA1HZ-223	CAPACITOR	0.022μF,50V
C1001	QCFA1CZ-104	CAPACITOR	0.1μF,16V
C1002	QCYA1HK-471	CAPACITOR	470pF,50V
C1003	QCYA1HK-152	CAPACITOR	0.0015μF,50V
C1004	QCYA1HK-152	CAPACITOR	0.0015μF,50V
C1005	QCYA1HK-102	CAPACITOR	0.001μF,50V
C1006	QCYA1HK-102	CAPACITOR	0.001μF,50V
C1007	QCFA1CZ-224	CAPACITOR	0.22μF,16V
C1008	QCYA1HK-471	CAPACITOR	470pF,50V
C1009	QEK60JM-107	E CAPACITOR	100μF,6.3V
C1010	QCFA1HZ-333	CAPACITOR	0.033μF,50V
C1011	QCVB1CN-103	CAPACITOR	0.01μF,16V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C1012	QCFA1CZ-224	CAPACITOR	0.22μF,16V
C1013	QCSA1HJ-470	CAPACITOR	47pF,50V
C1014	QCSA1HJ-101	CAPACITOR	100pF,50V
C1015	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C1016	QCFA1HZ-103	CAPACITOR	0.01μF,50V
L501	PU54223-470J	COIL	47μH
L503	PU54223-680K	COIL	68μH
L504	PU59152-560J	COIL	56μH
L505	PU59152-220J	COIL	22μH
L506	PU59152-470J	COIL	47μH
L507	PU59152-470J	COIL	47μH
L508	PU59152-121J	COIL	120μH
L509	PU59152-330J	COIL	33μH
L510	PU59152-180J	COIL	18μH
L1001	PELN0530-101JZ	COIL	100μH
BKT1	PQ21577	SHIELD FRM(PRE)	
CN501	PEMC0978-118	B TO B CONNECTOR	
CN502	PEMC1003-009	CONNECTOR	
CN1001	PU59555-106	CONNECTOR	

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DECK TERMINAL BOARD ASSEMBLY <51>

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PWBA	PB10715B-03	DECK TERMINAL BOARD ASSY	
Q1,Q2	PU61321-1-1	TAPE SENSOR,X2 (Q1 Q2)	
TH1,TH3	NTH5D473KB	THERMISTOR,X2	
IC1	M66007P	IC	
D1	GL381J	LE DIODE	
R1	QRD161J-102	RESISTOR	1KΩ,1/6W
R2	QRD161J-102	RESISTOR	1KΩ,1/6W
R3	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R4	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R5	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R6	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R7	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R8	QRD161J-103	RESISTOR	10KΩ,1/6W
R9	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R10	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R11	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R12	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R13	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R16	QRD161J-221	RESISTOR	220Ω,1/6W
R17	QRD161J-820	RESISTOR	82Ω,1/6W
R18	QRD161J-221	RESISTOR	220Ω,1/6W
R20	QRD161J-102	RESISTOR	1KΩ,1/6W
R21	QRD161J-223	RESISTOR	22KΩ,1/6W
R22	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R23	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R24	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R25	QRD161J-472	RESISTOR	4.7KΩ,1/6W
R26	QRD161J-563	RESISTOR	56KΩ,1/6W
R27	QRD161J-103	RESISTOR	10KΩ,1/6W
R28	QRD161J-103	RESISTOR	10KΩ,1/6W
R29	QRD161J-103	RESISTOR	10KΩ,1/6W
R30	QRD161J-103	RESISTOR	10KΩ,1/6W
R35	QRD161J-390	RESISTOR	39Ω,1/6W
R36	QRD161J-101	RESISTOR	100Ω,1/6W
C1	QCVB1CM-103	CAPACITOR	0.01μF,16V
C2	QCVB1CM-103	CAPACITOR	0.01μF,16V
SW1	PU61320	S CASS.SWITCH	
S1	PU61319	REC SAFETY SWITCH	
PS1	PU61318	REEL SENSOR	
PS2	PU61318	REEL SENSOR	
CN1	PEMC0918-016	FFC CONNECTOR	
CN2	PU60642	7PIN CONNECTOR	
CN6	PU59555-4	CONNECTOR	

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LOADING MDA BOARD ASSEMBLY <55>

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PWBA	PB10715A2	LOADING MDA BOARD ASSY	
⚠ IC101	BA6418N	IC	
⚠	or XRA6418N	IC	
C101	QETC1CM-476	E CAPACITOR	47μF,16V
WR1	PW30218-04416	WIRE	
CN101	PU59555-104	CONNECTOR	

SECTION 6
TECHNICAL INFORMATION

6.1 SYSCON CIRCUIT

6.1.1 Syscon CPU pin function (IC601) 1/2

PIN NO.	LABEL	IN/OUT	NOTE
1	PERI2.SEL	IN	PELI-2 CONNECTOR SELECT
2	PDOWN	IN	POWER DOWN DETECT(POWER DOWN H - L)
3	NC	-	NC
4	AVGFM	IN	AUTO TRACKING DATA(AVERAGE VOLTAGE OF PB FM LEVEL) INPUT
5	AVSS	-	GND
6	TEST	-	GND
7	X2	-	MAIN SYSTEM CLOCK(10MHz)
8	X1	-	MAIN SYSTEM CLOCK(10MHz)
9	VSS	-	GND
10	OSC1	IN	SUB SYSTEM CLOCK
11	OSC2	OUT	SUB SYSTEM CLOCK
12	RESET	IN	RESET AT CONNECT VCR TO AC
13	(NMI)	-	NC
14	EX DATA	OUT	ABIT EXP DATA FOR CH PLS CONTROL
15	S.ID IN	IN	SCRAMBLE DETECT
16	P.MUTE	OUT	PICTURE MUTE CONTROL(MUTE ON:H)
17	SYNC DET	IN	SYNC DETECT(NO SYNC:H)
18	LOCKDET	IN	TUNING LOCK CHECK
19	MCE	OUT	MEMORY IC CHIP ENABLE
20	EE	OUT	EE MODE:L
21	R.PAUSE	IN	REMOTE PAUSE CONTROL(PAUSE ON:L)
22	TU FG	IN	TAKE-UP REEL ROTATION DET/TAPE REMAIN
23	PCTL	OUT	POWER CONTROL(POWER ON:H)
24	SUP FG	IN	SUPPLY REEL ROTATION DET/TAPE REMAIN
25	V.MUTE	OUT	VIDEO MUTE:H
26	HRECST	OUT	HiFi REC START:L
27	FEHCTL	OUT	FLYING ERASE HEAD CONTROL(FE ON:H)
28	AMUTE	OUT	AUDIO MUTE CONTROL(MUTE ON:L)
29	AI DATA	OUT	AUDIO CONTROL DATA OUTPUT
30	AI CLK	OUT	AUDIO DATA TRANSFER CLOCK
31	H SEL	OUT	HEAD SELECT CONTROL(SP:L/LP:M/EP:H)
32	A/M/S	OUT	PRE/REC CIRCUIT CONTROL(AUTO:M/MANUAL:H/S&S:L)
33	REC	OUT	REC:H
34	RECST	OUT	REC START:H
35	TU-DATA	OUT	TUNING CONTROL DATA
36	S-CLK	OUT	DATA TRANSFER CLOCK
37	SERVO	OUT	CAPSTAN MOTOR CONTROL(SERVO:L/MECHACON:H)
38	PAUSE	OUT	CAPSTAN MOTOR CONTROL(PAUSE:L)
39	MECHA DATA	IN	MECHANISM MODE CONTROL DATA INPUT
40	MECHA CLK	OUT	MECHANISM MODE DATA TRANSFER CLOCK

Table 6-1-1-A SYSCON CPU pin function (1/2)

6.1.2 Syscon CPU pin function (IC601) 2/2

PIN NO.	LABEL	IN/OUT	NOTE
41	JSA	IN	JOG DIAL PULSE INPUT
42	JSB	IN	JOG DIAL PULSE INPUT
43	STL	IN	SHUTTLE SWITCH
44	CPLS	IN	INDEX CONTROL
45	VPCTL	OUT	V.PULSE ADDITION TIMING CONTROL
46	CAPREV	OUT	CAPSTAN MOTOR CONTROL(FWD:H/REV:L)
47	OS CE	OUT	ON SCREEN CHIP ENABLE
48	RAEOUT	OUT	REMOTE PAUSE CONTROL OUTPUT
49	EXP DATA	OUT	ABIT EXP DATA FOR CH PLS CONTROL
50	RC IN	IN	REMOTE CONTROL DATA INPUT
51	I2C CLK	OUT	NICAM DATA TRANSFER CLOCK
52	CTLP	IN	CTL PULSE INPUT(MODE DETECT/BLANK PORTION DET)
53	I2C DATA	OUT	NICAM CTL DATA OUTPUT
54	DEM MUTE	OUT	DEMOD MUTE CONTROL(MUTE ON:H)
55	LCM1	OUT	LOADING MOTOR DRIVE(1)
56	LCM2	OUT	LOADING MOTOR DRIVE(2)
57	S-OUT	OUT	ON SCREEN CONTROL DATA
58	S-IN	IN	ON SCREEN /FDP CONTROL DATA
59	S-CLK	OUT	DATA TRANSFER CLOCK
60	SERVO DATA	OUT	SERVO IC CONTROL DATA
61	M-DATA	OUT	MEMORY IC DATA
62	SERVO CLK	OUT	DATA TRANSFER CLOCK
63	VCC	-	SYSTEM POWER
64	STB	OUT	CLOCK OUTPUT PERMISSION
65	TUCTL	OUT	TUNER MODE
66	N.D	IN	NORMAL AUDIO DETECT(NORMAL AUDIO:L)
67	CPLS	IN	INDEX CONTROL
68	VUP	OUT	CAPSTAN MOTOR VOLTAGE UP(13V-17V)
69	CAP FG	IN	TAPE SPEED DETECT/BACK SPACE COUNT
70	DUTY I/O	IN/OUT	IN/OUT INDEX DATA CONTROL
71	D.FF	IN	DRUM ROTATION DETECT/REC TIMING CONTROL
72	AVCC	-	SYSTEM POWER(for ANALOG)
73	-	-	GND
74	SPEED CTL V	OUT	TAPE SPEED CTL VOLTAGE OUTPUT
75	DRUM V	OUT	DRUM MOTOR CONTROL
76	CAP V	OUT	CAPSTAN MOTOR CONTROL
77	PROTECT	IN	POWER PROTECT DETECT(POWER OFF:L)
78	A.LEVEL L	IN	AUDIO INDICATOR LEVEL INPUT(Lch)
79	A.LEVEL R	IN	AUDIO INDICATOR LEVEL INPUT(Rch)
80	THERM	IN	THERMIC CORRECTION(SLOW CAPSTAN BRAKE CTL)

Table 6-1-1-B SYSCON CPU pin function (2/2)

6.2 TIMER CIRCUIT

6.2.1 Timer CPU pin function (IC1)

PIN NO.	LABEL	IN/OUT	NOTE
1	SW1	-	GND
2	SW2	IN	FRONT INPUT:H
3	SW3	-	GND
4	SW4	-	GND
5	D OUT	OUT	SERIAL DATA OUTPUT
6	D IN	IN	SERIAL DATA INPUT
7	IC	-	NC
8	CLK	IN	DATA TRANSFER CLOCK
9	STB	OUT	CLOCK OUTPUT PERMISSION
10	KEY1	IN	KEY SCAN DATA INPUT
11	KEY2	IN	
12	KEY3	IN	
13	KEY4	IN	
14	VDD	-	UNSW 5V
15	Seg1	OUT	SEGMENT DISPLAY DATA/KEY SCAN PULSE OUTPUT
16	Seg2	OUT	
17	Seg3	OUT	
18	Seg4	OUT	
19	Seg5	OUT	
20	Seg6	OUT	
21	Seg7	OUT	
22	Seg8	OUT	
23	Seg9	OUT	
24	Seg10	OUT	
25	Seg11	OUT	SEGMENT DISPLAY DATA OUTPUT
26	Seg12	OUT	
27	Seg13	OUT	
28	Seg14	OUT	
29	Seg15	OUT	
30	Seg16	OUT	
31	Grid11	-	COLUMN DISPLAY DATA OUTPUT(GRID CONTROL)
32	Grid10	-	
33	VDD	-	UNSW 5V
34	VEE	-	FDP DRIVE(-28V)
35	Grid9	OUT	COLUMN DISPLAY DATA OUTPUT(GRID CONTROL)
36	Grid8	OUT	
37	Grid7	OUT	
38	Grid6	OUT	
39	Grid5	OUT	COLUMN DISPLAY DATA OUTPUT(GRID CONTROL)
40	Grid4	OUT	
41	Grid3	OUT	
42	Grid3	OUT	
43	Grid2	OUT	
44	Grid1	OUT	
45	VDD	-	UNSW 5V
46	NC	-	NC
47	NC	-	NC
48	NC	-	NC
49	HYPER BASS	OUT	HYPER BASS LED CONTROL(ON:H)
50	OPERATION	OUT	POWER LED CONTROL(ON:H)
51	VSS	OUT	GND
52	OSC	-	NOT USED

Table 6-2-1 TIMER CPU pin function.